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May 1998
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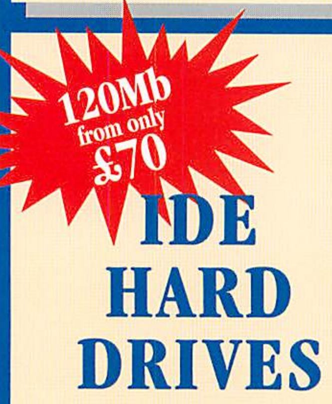
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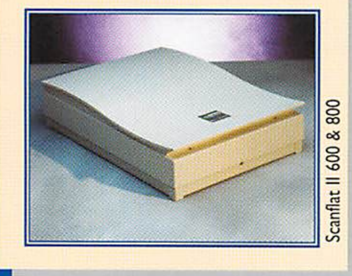
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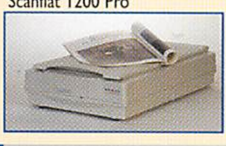
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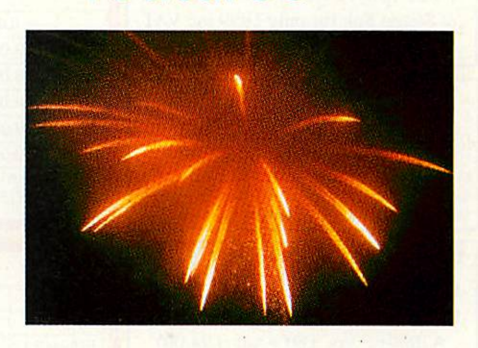
Four page Doom special

DOOM

Turn to page 26



• features



• hands on

• education

• reviews

NEW SUBS OFFER
See page 86 for details

The Acorn User website
Check it out at:
http://www.idg.co.uk/acornuser/

Advertisers index
See page 88 for details

Next month in Acorn User

We'll tell you all that Acorn will reveal about the Risc PC II, PLUS read the first part in our series in which we look at a selection of printers. There'll be plenty of reviews, another Success Story and all the regulars – so don't miss it.

Next issue on sale 14 May 1998

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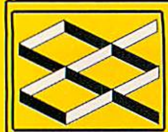
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More Acorn restructuring





Peter Bondar (left): Heading the Software division in California & Chris Cox at the helm of the Workstation division

Acorn have, yet again, reorganised themselves. Three distinct divisions have been formed: Software, Consultancy and Workstations. The Software division will have their own office in California, headed up by Peter Bondar. California is the prime territory for Acorn to win customers for their software solutions, including operating systems and related software technologies.

The Consultancy division will continue the nuts and bolts development work for third-party companies, and the resulting technology will be made available, where appropriate, to the third division, the Workstation division.

This is headed by Chris Cox and centres around desktop computers, including the A7000 and Risc PC as well as NCs for education in partnership with Xemplar. NCs for the consumer market will be supplied to other companies, like NetProducts, for example. Chris Cox's division will remain responsible for the enthusiasts and specialist workstation markets as well as the Clan. We'll be taking a closer look at Acorn's reorganisation next month, including an interview with Acorn's new vice-president of marketing and business development, Andy Mee.

Apple axe Newton

Although the writing had been on the wall for some time, it was still a shock to learn of the actual demise of Apple's Newton division. Acting Apple CEO, Steve Jobs, had reportedly never been in favour of the Newton project. After all, it was a pet project of his nemesis, John Scully, who had forced Jobs out of Apple some years earlier. Personalities aside, Newton was a remarkable technology which, as with many such clever ideas, was before its time and badly marketed at its inception.

Remarkably, Newton was indirectly responsible for providing Acorn with their future direction. Apple chose Acorn's ARM processor to be at the heart of the Newton hardware as long ago as 1990. A condition of Apple adopting the ARM was the formation of ARM Ltd, which provided ARM technology with some independence from Acorn and endowed them with co-ownership from Apple and chip-maker VLSI Technology. Today, Acorn depend crucially on third-parties applying ARM technology to their own products, a scenario which would have been unheard of before ARM Ltd was formed.

With the most powerful RISC processor suitable for battery-powered devices, Apple built the amazing ARM-powered Newton personal digital assistant which was launched in 1992. Slightly too big for a your average pocket, this was nevertheless the first keyboard-less pocket computer and it ran an advanced pen-centric operating system, complete with cursive handwriting recognition.

The OS was unlike anything seen on a desktop machine before – there was no conventional filing system and the OS was designed to learn your habits and automate repeated processes automatically. Unfortunately, in the rush to get it to market, the Newton MessagePad 100 was shipped with a bug-ridden operating system which required a series of software patches within months.

The choice of weight and space-saving AAA batteries was also a mistake as users reported disappointing battery life. The handwriting recognition was clever, but most users found it frustrating to use. Thus, the reputation of the Newton was damaged from day one. Apple eventually solved most of these problems, but failed to make a smaller and lighter version – in fact the last model, the StrongARM-based MessagePad 2100, became more of a notebook PC alternative than a pocket computer. It was also too expensive and sales were always disappointing.

One exception was the Newton eMate for which, Acorn's other partnership with Apple, Xemplar Education has found a measure of success. Not only inexpensive, but a great looking design, this portable computer for school kids has generated much interest on both sides of the Atlantic. Xemplar say Apple's decision to end development of the Newton technology does not mean eMate will be stillborn. By all accounts, Xemplar have already arranged for substantial quantities of eMates to be shipped in the UK this year and the Acorn connectivity utility software which has been under development for some time will still be delivered this coming Easter as planned. While Steve Jobs has junked the essential technology of the Newton platform, many of the ideas and principles embodied by Newton will be retained in a new family of PDA products due to be unveiled next year.

However, these will be based on Apple's desktop operating system, Mac OS. They won't use ARMs either as currently Mac OS is tied to the PowerPC RISC processor platform. PowerPC is a powerful RISC platform, but not one known for its power thrift and combined with an ageing desktop operating system, some are severely questioning Apple's logic in killing off the ARM-based Newton now.

Ironically, Newton did have a short-lived chance to survive and develop out of the Apple fold – Jobs originally proposed that the Newton division be spun-off as an independent company, but that decision was soon reneged upon.

Quake your boots



Planning to buy a PC card just to play Quake? A recent press release from RCI said 'don't'. So, after Doom can we expect Quake – it looks like it

news



CeBIT boost for ARM Ltd

ARM Ltd had a very positive CeBIT show in Hannover, Germany, recently. The world's largest IT event with almost 700,000 visitors in just seven days, CeBIT saw a plethora of ARM-based products exhibited by a wide range of companies. A number of Acorn-designed Network Computers were shown by various companies, Psion and Geofox were demonstrating their now established PDAs, but where ARM seem to have really scored with their technology recently is in the mobile phone world.



The German industrial giant, Siemens, showed their prototype ARM-based Mobile Video, also known as a video handy. ARM Ltd say that the Siemens prototype is one of the first to provide a mobile video phone. 'The StrongARM chip, with its low power dissipation can deliver the sophisticated communications and entertainment features that consumers want for mobile products," said Gerhard Bock, Project Leader, Siemens AG.

NEC's new G10 GSM phone is also ARM-powered. NEC's LSI group leader Brian McMath commented: 'Power efficiency and performance were key requirements for the revolutionary Multimode NEC G10. Therefore the ARM architecture, with the additional benefit of multi-sourcing, was selected as the best solution.' Multi-sourcing means manufacturers aren't tied to a single source of ARM chips, vital in maintaining value-for-money confidence in chip supplies.

Panasonic's latest G450 and G600 GSM mobiles are further examples of ARM-based phones. Once again there was undisguised praise for ARM's technology, this time from Mr Masahiko Yamamoto, Managing Director, Matsushita Communication Industrial UK (Panasonic is a Matsushita brand): 'With the leading price, performance and power efficiency offered by the ARM architecture we were able to deliver the high performance and long battery life found in both these models.'

Perhaps the most interesting ARM-based development at CeBIT this year came from Philips and was also GSM phone-based. Philips' new Synergy GSM 'Smartphone' looks like a fairly conventional pocket phone, but its novelty is in its companion device – a touch-screen organiser which uses the Psion Epoc 32 operating system.

The compact phone can be used conventionally on its own, but can also be plugged into the companion organiser which encloses the phone, so that you have an elegant ready-made wireless data organiser complete with e-mail and Internet browsing capabilities. The ARM-based organiser takes its power from the phone and isn't designed to be used by itself. Surprisingly, the user interface is not similar to that of either the Psion Series 5 or Geofox PDAs, which are the other obvious examples of Psion Epoc 32-based products.

Instead, Psion have implemented their own user interface on top of the basic Epoc 32 sub-system. As there is no keyboard, the user can take advantage of a handwriting recognition facility (though this only works one character at a time) or a 'virtual' on-screen keyboard. It's not yet clear how difficult it will be for application developers to tailor their Series 5 software for the Psion solution.

Philips currently offer non-ARM Microsoft Windows CE-based products as well as the Epoc 32 ARM-based Synergy smartphone, so the choice of an ARM-based product had to be carefully justified. Barry Jones, Senior Product Manager Philips Consumer Communications, commented: 'We selected ARM's RISC technology because of its industry leading price, performance and power efficiency. This combination of features is precisely what we needed to design an affordable, high-end smartphone without compromising ease-of-use, time-to-market, performance, battery life or depth of applications.' The Philips Synergy smartphone is already selling in the US and will be introduced throughout Europe this Summer.

Other CeBIT vendors of ARM-based products included Fujitsu, with their Fax 2000 GSM Mobile Fax, Samsung, with their SGH-250 GSM dual-band mobile phone and Microlise, which market a range of digital wireless data tracking terminals.

ARM Ltd to float

If you, like many, have admired what ARM Ltd have achieved in the last eight years, soon you will be able to translate that admiration into company shares. ARM Ltd, through ARM Holdings plc, have announced their intention to seek a listing on the London Stock Exchange and a quotation for American Depositary Shares on the Nasdaq National Market in the United States. ARM Ltd are currently co-owned by Acorn, Apple Computer and VLSI Technology, the former two having an equal share of around 40 per cent apiece.

In official jargon, ARM plan to carry out a Global Equity Offering for a total of around £40 million ($66 million). The offering will be made in the US, UK and other selected jurisdictions and will consist of a primary issue of approximately £20 million ($33 million) and a secondary issue of approximately £20 million ($33 million).

The offering outside of the United States will be limited to institutional investors. According to our resident money expert, although institutional investors will get the first bite here in the UK, their shares should, in time be available to ordinary investors like you and me. Otherwise, presumably, ordinary investors will be able to buy shares through the US Nasdaq exchange.

The usual reason for making a share issue is to raise money for re-investment in order to expand. We note that ARM Ltd are a 'people' company and do not require funds to invest in manufacturing or other material-based production activities. So what will the extra money raised be used for? Certainly research and development will be a prime candidate, but we can't help thinking that the flotation might be for some other reason as well.

Now that Apple have effectively closed their links with ARM Ltd through the closure of the Newton division (see other story), perhaps Apple are preparing to sell their share in ARM? Who knows?

Stop press – Argo and ANT join forces

Just as we were going to press a new strategic alliance between the Argo Interactive Group plc and ANT Ltd of Cambridge was announced.

This partnership is expected to bring significant benefits to both companies and to the development of products and services for the RISC OS Internet-related market.

By the time you read this, ArgoNet should have released a new version of the *Voyager Internet Suite* incorporating ANT's Web browser, *Fresco*. Other developments expected over the next few months include improved e-mail and news capabilities for *Voyager*.

It has been confirmed that the *ANT Internet Suite* and new *ANT Internet Server Suite* will be marketed and supported through Argo. These products, and future developments to them, should considerably enhance ArgoNet's Internet Services including the new Education Online Service for schools launched at BETT 98.



More changes at Acorn

Another familiar name at Acorn has gone. Kevin Coleman, a popular figure with the journalists he had to persuade to write positive copy about Acorn over the years, has left Acorn. Coleman was always at the prickly end of Acorn's interface with the Press. It was he, as marketing communications manager, who had to persuade us that Acorn were doing the right thing – even when we thought otherwise.

Despite the eternal struggle to make journalists from outside the Acorn community see things Acorn's way, plus the odd disagreement over Acorn's strategy voiced by Acorn journalists, he was always a welcoming personality at the many Press briefings he arranged at Acorn's head office.

Kevin's PR efforts weren't unrewarded, either. It was Kevin's initiative to book a full page ad in the broadsheets a few years back welcoming Apple to the RISC family. This was after Apple had mistakenly claimed to have pioneered RISC-powered consumer computers. More recently, Kevin and Acorn's PR company Text 100 won prizes for their Web-based marketing



campaigns. Co-incidentally, Text 100's PR contract with Acorn was left to lapse at the same time Kevin Coleman departed Acorn.

Although Kevin was a long-time Acorn staffer, first joining the company back in the BBC Micro days as a sales manager, he continually adapted to the change in Acorn's fortunes and direction. So it was with some surprise that we learned of his departure from Acorn – once the frequent purveyor of news that some or other well-known personality at Acorn had been made redundant, He is now in that same sad position. We wish him well.

Meanwhile, and perhaps not unconnected with Coleman's departure, a new name has appeared on the Acorn roll; Andy Mee, who is Acorn's new vice-president of marketing and business development. Mee is a refugee from Sega, who are currently taking a pasting, along with Nintendo, from the all-conquering Sony PlayStation games console. We were unable to synchronise diaries for an interview with Mee before this issue's deadline, but hope to publish a full interview with him next month.

Canon's digital 'Ixus'

Photography fans will be familiar with the name 'Ixus' – it's Canon's matchbox-sized APS (Advanced Photo System) camera, one



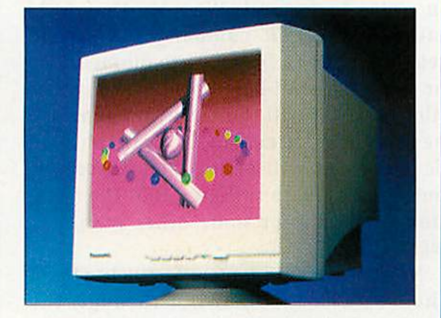
of the marvels of modern compact camera design. However, the Ixus isn't a digital camera and Canon's efforts in this area to date have been far from compact.

That all changed at CeBIT this year with the introduction of the new PowerShot A5, a truly tiny digital camera which still boasts an 810,000 pixel imaging chip, which equates to a full frame maximum resolution of 1024x768. Unsurprisingly, Canon staff have unofficially dubbed their new baby the digital Ixus. The camera uses Compact Flash memory cartridges, has PAL video output and a serial port, plus it uses industry standard image file formats and shouldn't be difficult to adapt for use with Acorn computers. No price has yet been revealed, but the PowerShot A5 should be available this summer.

Price-busting Panasonic 17 inch monitors

Seventeen inch monitors have halved in price over recent years while improving in quality and benefiting from added features like microprocessor controls. Panasonic's new PanaSync S70 has a maximum 70KHz scanning rate, a dot pitch of 0.27mm and is capable of displaying 1280x1024 resolution screen modes at a refresh rate of 65Hz.

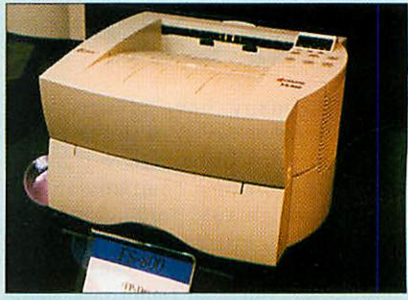
It also has advanced energy saving features and the latest radio frequency and magnetic field suppression systems. All this is for a recommended price of £300 + VAT, so expect actual street prices to be slightly lower.



Panasonic, tel: 0500 404041, WWW: http://www.panasonic.co.uk

Green lasers

And we're not talking optical wavelengths, but referring to the eco-friendliness of laser printers. Practically all laser printers on the market are surprisingly un-green. Typically, when your laser printer runs out of toner, not only do you need to replace the spent toner, but you need to replace the all-important drum mechanism which makes up the bulk of the cartridge. This is



because the surface of the rubberised plastic drums wear out over time.

It also means the printer manufacturer and third-party specialists can make money replacing worn cartridges. Not so with Kyocera laser printers – their super-hard polycrystalline drum technology, derived from Kyocera's core business of high-tech ceramics, means the drum lasts the life of the printer so all you need to replace is the toner powder itself.

Not only is this eco-friendly (the printers are branded EcoSys), but running costs over time are considerably lower. Kyocera's newest low-cost personal printer is the FS-800, which was styled by the Austrian Porsche design consultancy.



Rewritable DVD – the real issues

For the last few months *Acorn User* has been following the confusing industry battle to bring the next-generation recordable compact disc to market. High-capacity recordable CDs, more properly known as DVDs (digital versatile or video disc), are set to be popular products of the future for both home users and computer users, with Acorn users being no exception.

Ultimately, recordable DVDs will replace video tape for domestic video recording. It is generally agreed that this won't happen until the technology gets cheaper and the capacity of recordable DVD reaches at least 10 gigabytes per disc. Until then, recordable DVD will be aimed mainly at computer users as another choice in the rapidly expanding removable disc storage market.

Recordable DVD products that will be available to buy this year will either offer 2.6Gb or 3Gb storage capacity per side of the disc. And therein lies the confusion. At the recent CeBIT trade fair in Germany, two opposing groups of companies were wooing the computer industry with largely incompatible recordable DVD product families.

In one corner you have the likes of Sony, Philips, Hewlett-Packard and Ricoh. These are the 'rebels' – who are promoting their DVD+RW format – rebels because the official DVD Forum, of which all are members, has officially settled for a different format called DVD RAM. The DVD+RW proponents presented their technology to the recordable DVD committees within the DVD Forum, but decided to go their own way once the DVD Forum decided on the DVD RAM format.

What's fascinating about this industry fight is that it promises to re-live the infamous war between Sony and JVC back in the 1980s over the video tape formats Beta and VHS. Sony were on the losing end of that one and many are suggesting they are flogging a dead horse this time too. More seriously, the fight means computer buyers will be uncertain about which products to choose in the short-term.

It hasn't been easy to distil the facts from the PR bluster; both camps appear to be calling each other liars over certain issues, but we reckon that we now have the core facts to differentiate the two.

The companies backing DVD+RW are all doing very nicely, with their current CD+RW rewritable products. DVD RAM, which is set to ship in May or June, is a huge threat to the current CD+RW offerings. CD+RW offers 650 megabytes of re-recordable storage on a single CD compared to 2.6 gigabytes on first generation DVD RAM discs.

Double-sided DVD RAM discs double-up their capacity to 5.2Gb, though only one side can be accessed at a time. Panasonic have announced their first DVD RAM drive will have a recommended price of £399 and blank DVD RAM discs will cost around £15 for single-sided media and around £24 for double-sided media. That's already very competitive with CD+RW and prices are likely to fall as production ramps up. Hitachi and Toshiba have already committed themselves to follow Panasonic into the DVD RAM market soon, with others like Teac, Pioneer and others waiting in the wings.

Meanwhile, the rebel DVD+RW gang say



their version of DVD+RW is better for a number of reasons. Firstly, their first generation products will have a 3Gb capacity, some 15 per cent greater than DVD RAM. They also claim their technology will mean faster performance, though there has been no practical evidence of this as no sample drives have been available to test.

It has also been decided that DVD+RW discs will be sold in the same way as CD+RW media – as bare discs. DVD RAM discs will be sold in protective cartridges. Nevertheless, the DVD+RW proponents say the cartridge format will be fundamentally unpopular with users. On the other hand, the DVD Forum points out that the DVD RAM format's scratch and dirt error resistance capability is much stronger than DVD+RW, so if anything it's DVD+RW that crucially need the protection of a cartridge. The DVD+RW people refute this claim, so it will be down to users to find out just how reliable DVD+RW will be.

Technically, DVD RAM has a more efficient file system, so although its total storage capacity is only 87 per cent of a comparable DVD+RW disc, if many small files are stored, which is typically the case with computer use, more could be stored on a DVD RAM disc than a DVD+RW disc, because less space is wasted. Only one vaguely compelling reason in favour of DVD+RW might exist and this has yet to be confirmed definitively – that DVD+RW drives might be able to both read and write 650Mb CD media. DVD RAM will only be able to read these discs.

Currently, no DVD read-only drives (ROM) which are currently shipping can read either DVD+RW or DVD RAM discs. The DVD Forum has guaranteed that the DVD ROM standard will be extended to include DVD RAM compatibility. Presumably, DVD ROM drives from DVD+RW backers like Philips and Sony will comply with this standard, while adding DVD+RW read capability as well, but there is no guarantee that other DVD ROM drives will ever read the unofficial DVD+RW standard.

What's more, while DVD RAM drives will ship this summer, DVD+RW may not even ship until next year. Some cynics are even suggesting DVD+RW may never ship as it is all just a ruse to extend the life of 650Mb CD recordable products by putting buyers off DVD RAM. When Sony fought their video tape war, the experts agreed Sony's technology was better than JVC's, but the industry chose to standardise on the JVC format. This time, Sony are hawking the inferior technology, but the industry looks like humiliating Sony once again.

Time to embrace new generation of photo-real inkjet printers

Inkjet printer technology is developing at a tremendous rate. Your reporter owns a Canon BJC-600, which was state-of-the-art (and cost £500) four years ago. Today, this printer looks archaic compared to contemporary models you can now pick up for less than £200. Four years ago, Canon were the leader with their 360dpi four colour inkjet technology. Now we have 1440 dpi and six-colour systems which can produce photographic prints which are difficult to tell from original photographs without a magnifying glass.

Another feature of the industry's development is that the traditional leaders, Canon and Hewlett Packard, have been upstaged by Epson and Lexmark. The former two are still stuck at 720dpi resolution or below and defensively claim that's all the resolution you need for photographic output. However, reviewers disagree and Epson's advanced 720dpi and now 1440dpi photo-quality printers and Lexmark's 1200dpi photo-quality printers are leading the way.

Lexmark have just introduced their new 5700 six-colour model, which brings state-of-the-art inkjet printing down to around £200. Epson's successful Stylus Color family now gets its second 'Photo' model, the Model 700, with 1440x720dpi six colour printing. To date, Acorn vendors have been slow to embrace Epson and Lexmark standards with appropriate RISC OS drivers, content instead to maintain HP and Canon support. Surely, now is the time to enable Acorn users to benefit from the very best inkjet products?

news



Recordable CD from Eesox

Three new CD-Recorder drives are now available from Acorn CD specialists, Eesox. The first is a 2x write and 6x read internal drive unit which works via a Risc PC's IDE interface. The second is a parallel port external drive unit and is also 2x write speed and 6x read. This unit is compatible with 'second generation' Acorn RISC models featuring bi-directional parallel printer ports, including the A3010, A3020, A4000, A5000 and later models. The third model is a higher performance SCSI-based drive (4x write and 8x read) and is available with or without the Eesox SCSI II card.

Prices for Eesox CD Recorders start at £329 + VAT (which happens to be the internal 4x/8x SCSI unit) and all are supplied with both Acorn and PC writing software. Eesox has also introduced 32x read-only CD-ROM drives for both SCSI (£125+VAT internal, £175+VAT external) and IDE (£89+VAT) interfaces. Eesox can be contacted on tel/fax: 01954-208208 or e-mail: sales@eesox.demon.co.uk

Fast CD options from Clares

Clares Micro Supplies have announced they are now shipping two new 24x and 32x CD-ROM drives. Both drives are supplied with their own ATAPI (IDE) drivers. The units are the latest specification and are capable of reading both write once recordable CDs (CDR) and rewritable CDs (CD+RW).

Compatibility with the latter is not yet guaranteed with all brand new CD-ROM drives on the market. The Clares drives come with all necessary accessories including, IDE cable, sound cable, Acorn manual and fitting instructions. You also get a PC manual, fitting instructions and driver and fixing screws. The 24x drive is priced £89.95 inc VAT And the 32x drive £109.95+VAT.

Clares, tel: 01606 48511, fax: 01606 48512, WWW: http://www.stcoll.ac.uk/clares/, e-mail: dclare@clares.demon.co.uk

Risc PC II – not yet on sale at Wakefield, but...

...Clan members will get an exclusive opportunity to view the final prototypes at the show in May. Chris Cox will hopefully reveal the near final specification of the Risc PC II, which is now expected to enter production during the summer for initial shipping around August time. Demand is expected to be high for the first production run and it's hoped that people will be offered the chance of reserving their own Risc PC II at the show. There is also going to be a Risc PC II tour of the country at the following venues:

14 April Liverpool Acorn User group
11 May Derbyshire Acorn Risc Club
22 May Welwyn Hatfield Computer Club
17 June Northwest London Computer Club

More info at http://www.argonet.co.uk/scs/ AAUG/

Product	New features/product details	Price	Contact
Cell City	* New approach to teaching about cell function * Includes an interactive glossary, a collection of photomicrographs, on-screen slide show and activities and teacher info & worksheets * For 14-16 year olds, KS3 & 4	£50 incl. a 10-user site licence	SCA (Anglia Multimedia) Tel: 01268-755811
Mustek VDC100 digital camera software update	* Improved image quality * Image processing allowing adjustment of brightness, contrast & colour balance * Faster saving of JPEGs	Camera with software - £100 + p&p + VAT (£124.55 total)	Innovative Media Solutions Ltd Tel: 01934 522880 E-mail: sales@ims-bristol.co.uk
UK distribution of Bubble Impact (Moving Pixels)	* Owl-Art Un-Ltd have aquired UK distribution rights of this fast moving arcade-style game * Improved for faster gameplay * New 'Challenge' mode * Updated demo game on website	Full version - £4.50 Cheques or postal orders made payable to A M Conroy	Owl-Art Un-Ltd 100 Skegby Road, Annesley Woodhouse, Kirkby-in-Ashfield, Nottingham, NG17 9FF WWW: http://www.acornarcade.com/
LiveMedia beta release	* An operating system support module to give a degree of crash recovery for RISC OS software * Modifies the boot sequence * Provides a facilty whereby critical processes can be re-started asap after a machine has crashed and been reset	£5 £10 incl manual	Digital Evolutions E-mail: luke@digievo.demon.co.uk
Olympus Digital camera price reduction	* All cameras are bundled with PhotoLink software	C420L now £399 (was £499) C820L now £699 (was £899) Prices inc VAT	Spacetech Tel: 01305 822753
Epson A3 colour flat-bed scanner (GT12000)	* Optical resolution of 800 dpi, 36 bit colour depth and max scan area of 17 x 12 inches * Optional full-size transparency adaptor * Bundled with ProImage	Intro price of £2195 inc carriage & VAT	Irlam Instruments Ltd Tel: 01895 811401 E-mail: sales@irlam.co.uk
New generic digital camera support for Album	* Pics can now be downloaded directly from a digital camera without the need for a separate software driver * Support for over 20 cameras	Album – £31.14 inc carriage & VAT. Upgrade is £7.64 on return of master disc	Irlam Instruments Tel: 01895 811404 E-mail: sales@irlam.co.uk
GeoFox update	* Reduced prices * All GeoFox & Psion machines bought through IMS come with a free copy of PsiRisc - their Acorn/EPOC connectivity software	A 16Mb GeoFox now costs the same as a 4Mb Psion 5 - £439.95 inc	IMS Tel: 01934 522880 E-mail: sales@ims-bristol.co.uk WWW: http://www.ims-cdc.demon.co.uk/palmtop/ (for all new prices)
Personal Accounts version 4	* Many new features including: Instant reporting, auto monthly reports, single click column sorting, balance forecast warning plus lots more * Due to be released at the Wakefield show	£49.95 Upgrades for existing users cost £15	Apricote Studios Tel/Fax: 01354 680432

On the move

AJS Computers Ltd can now be contacted at Unit 28 East Hanningfield Estate, Old Church Road, East Hanningfield, Essex CM3 8AB. Tel: 01245 400066 (sales), 01245 400034 (technical) or fax 01245 400014.

Spacetech Ltd have also moved. They are now at 1 The Courtyard, Southwell Business Park, Portland, Dorset, DT5 2JS. WWW: http:// www.spacetech.co.uk Tel: 01305 822753 and fax: 01305 860483.

Network Solutions' new address is Unit 9, Sedgeway Business Park, Witchford, Ely Cambs, CB6 2HY. Tel: 01353 668976, fax: 01353 668737, e-mail: sales@planet. demon.co.uk. WWW: http://www. planet.demon.co.uk/

New dealer in North East

Electrical Systems Management (ESM Ltd) have announced the opening of a new Acorn dealership in the North East. ESM Computers opened on 9 March, selling Acorn Computers, CTX and iiyama monitors, Hewlett-Packard peripherals and other leading brands.

For more information on the new company, check out their website at http://www.argonet.co.uk/users/esm /index.html The company's address is Unit 10/11 YMCA Enterprise Centre, Philadelphia Lane, Herrington Burn, Houghton-le-Spring, Tyne & Wear, DH4 4JW, e-mail: esm@argonet.co.uk, tel/fax: 0191 584 5834.

Beebug restructures

The Beebug shop in St Albans, Hertfordshire, has closed. Realistically, passing trade from Acorn customers isn't what it used to be. Some shop staff have been made redundant as a result, however, Beebug co-founder Sheridan Williams tells us that the networking side of the business is actually being expanded and the software business, including development of *Ovation Pro*, remains unaffected. All the usual products previously available at the shop continue to be available via mail-order.

Beebug can be contacted at tel: 01727 840303, fax: 01727 860263, e-mail: sales@beebug.co.uk

Contacting me

You can contact the news page by writing to me Ian Burley at the usual Acorn User address or by e-mail: aunews@idg.co.uk

Showroom open Mon-Sat 10-18.00 hrs (All prices INCLUDE VAT) Carriage not included

CD-ROM Drives

Multi-Session, PhotoCD, CD-DA, White & Green Book compatible. SCSI drives require SCSI card withCDFS>2.20
Carriage: a=£2, b=£6, c=£8

Internal CD-ROM Drives

Panasonic 24xCD **ATAPI**	£70c
ATAPI Cable & Fitting Kit	£10a

Above drives are compatible with RiscPC Computers with RiscOS 3.60 or greater and all A7000 Computers.

Sony 2x CD **SCSI** 275ms	£60c
Pioneer 24x CD **SCSI** 130ms	£Callc

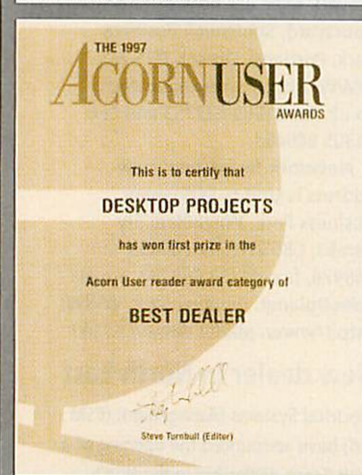
External CD-ROM Drives New

Panasonic 24xCD **ATAPI**	£160c
- suitable for Simtec IDE interface	
Sony 2x CD **SCSI** 275ms	£135c
Pioneer 24x CD **SCSI** 130ms	£Callc

TopicART CD £15a



This CD-ROM contains over 2000 ClipArt files, each in Draw, ArtWorks & CorelDraw3.0 EPS formats. The CD also includes high quality Replay Movies & other demos. Site Licence is included.



Hard Discs

New
Carr.: a=£2, b=£6, c=£8

NEW!! Simtec IDE Interface £69

New High performance IDE/ATAPI interface for all RiscOS Computers from A3000 to RiscPC (specify when ordering). Supports up to 4 IDE/ATAPI devices including ATAPI CD-ROM Drives.

3½" Hard Drives	IDE	SCSI
IBM 540Mb	-	£150b
Quantum 2.1Gb	£120b	£180b
Quantum 4.3 Gb	£170b	£240b
S/g Cheetah AV 4.5Gb	-	£520c
S/g Cheetah AV 9.1Gb	-	£830c

10,000rpm Cheetah drives are very suitable for VideoDesk.

Syquest Removable SCSI Drives

EZ230 Ext Drive	£120c	EZ230Mb Cartr.	£21a
EZ135Mb Cartr.	£20a	270Mb Cartridge	£40a

Hard Disc Interfaces/Accessories

IDE interface	£69b	50-50C SCSI Cble	£12a
Morley Uncached	£100b	25D-50C SCSI Cbl	£12a
Morley Cached	£135b	SCSI2-50C Cable	£15a
Cumana SCSI II	£155b	SCSI2-25D cable	£15a
		50IDC 4-way SCSI	£12a
External case/psu	£90c	50C Terminator	£12a
2nd IDE Drive Kit	£15a	50HPC Terminator	£15a



zip/jaz Drives

New

Now include our RiscOS JazZip tools (£17 if purchased separately)

- zip & jaz Drives work just like hard drives except they are removeable, giving instant access to files
- 100Mb discs for zip & 1Gb discs for jaz drives.
- Data transfer speeds up to 1Mb/s for zip drives & >5.5Mb/s for jaz drives - ideal for backup up.
- Each drive comes with 1 year warr. and a disc.
- SCSI drives require a SCSI card that is suitable for removeable devices.

Internal SCSI zip drive	**£115c**
External SCSI zip drive	**£115c**
External Parallel zip drive	**£115c**
- add £29 for RiscOS Parallel Driv'r	
Single 100Mb zip Cartridge	£13a
Pack of 6 zip Cartr. with caddy	£65b
Internal 1Gb jaz drive (3½")	**£210c**
External 1Gb jaz drive	**£230c**
Single 1Gb jaz cartridge	£70a

Carriage: a = £2, b = £6, c = £8, d = £10

JazZip Tools

New

The ultimate utility for SCSI or Parallel Iomega Zip/Jaz Drives

£17a Inc VAT

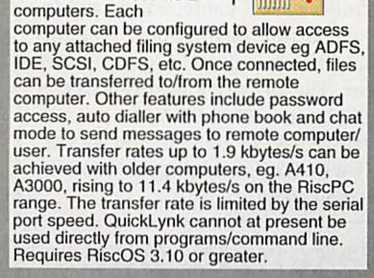
(free when purchased with a drive)

JazZip provides you with a complete set of RiscOS tools for Jaz/Zip drives which are equivalent to those provided with the PC DOS utilities that are provided with Iomega drives. Requires a driver for parallel use. Features include;

- Password protection of discs using the standard Iomega protection features which are compatible across RiscOS, PC and Mac platforms.
- Lock/Unlock zip/jaz discs without passwords.
- Lock/Unlock zip/jaz discs with passwords.
- Unlock zip/jaz discs until next ejected from drive.
- Low Level format zip/jaz discs.
- Initialise zip/jaz discs for RiscOS.
- Initialise zip/jaz discs for DOS/Windows.
- Unprotect the Tools disc provided with drives to allow them to be reformatted/Initialised for Acorn
- Compatible with IZipFS, Morley, Cumana, VTi, PowerTec SCSI. Other support to be verified.

QuickLynk (v1.04) £25a

With Local Cable 5m - £36a, 10m - £38a, 20m - £44a



QuickLynk allows you to access another remote RiscOS computer using the serial port via modems or locally using a cable to connect the 2 computers. Each computer can be configured to allow access to any attached filing system device eg ADFS, IDE, SCSI, CDFS, etc. Once connected, files can be transferred to/from the remote computer. Other features include password access, auto dialler with phone book and chat mode to send messages to remote computer/user. Transfer rates up to 1.9 kbytes/s can be achieved with older computers, eg. A410, A3000, rising to 11.4 kbytes/s on the RiscPC range. The transfer rate is limited by the serial port speed. QuickLynk cannot at present be used directly from programs/command line. Requires RiscOS 3.10 or greater.

RiscOS Computer Systems

Reduced Prices

1yr warr.**Carriage included on computers.** All machines are single slice. Backplane fitted to 10M R

233MHz StrongARM now fitted to all RiscPC Computers.

Computer Model with	14" (Samsung)	17"(8617)	No Monitor
A7000+ 8MHD1.2Gb	£925	£1225	£785
A7000+ 8MHD1.2Gb+8xCD	£975	£1275	£835
A7000+ 8MHD1.2Gb+24xCD	£995	£1295	£855
RiscPC StrongARM 4MHD1.2Gb	£1030	£1300	£890
RiscPC StrongARM 4MHD1.2Gb+8xCD	£1070	£1340	£930
RiscPC StrongARM 4MHD1.2Gb+24xCD	£1080	£1350	£940
RiscPC StrongARM 34MHD1.7Gb+24xCD	£Call	£Call	£Call

34M RiscPC includes Acorn's J233 Internet software pack (Avail.Apr 98)

NEW!! RiscPC's are now available with 15" iiyama Monitors

Add £75 to 14" (Samsung) prices for iiyama MF-8515G 15" Monitor.

Add £40 to 17" prices for iiyama MT-9017T instead of MF-8617T.

20/20 Finance on Acorn computers - ~20% deposit & 20 interest free monthly payments. Loans from £700(min) - £3000. Subject to status.

Mail Order - 0161-474 0778 (All prices INCLUDE VAT) The lowest prices without compromise

RiscPC PC Cards

Acorn 586-100 (128kb)	£350c
-above price includes PC Pro	
PC Pro (without PCExchange)	£38a
Windows '95 CD (Full)	£90a

The above can be installed directly from CD without previously installing DOS or Windows.

RiscPC Upgrades

New

RiscOS 3.70 Upgrade	**£58a**
- Above is suitable for RiscPC's only.	
233MHz StrongARM	£275b
2nd Slice with PSU	£116c
2nd Slice without PSU	£90c
YES 16 bit Mozart Card	£70a

Memory

Following prices strictly whilst stocks last.

RiscPC/A7000 SIMMS

4Mb	£20a	8Mb	£25a
16Mb	£30a	32Mb	£50a

RiscPC VRAM

1Mb 2nd user	£40a	2Mb	£88a
1-2Mb u/g (exchange)			£65a

Call for details of memory for other models.

Monitors (Carriage £10)

Older computers will require an adaptor	£12
Hi-Spec 14" Monitor	**£140**
FST, 0.28" dp, 1024x768, 30-54kHz & pre-sets.	
Ilyama MF-8515G 15"	**£215**
High spec FST Tube with 0.28" dot pitch	
Ilyama MF-8617T 17"	£410
High spec FST Tube with 0.26" dot pitch	
Ilyama MT-9017T 17"	£450
Very High spec Diamondtron tube, 0.25" stripe	

Printers (Carriage £8)

Canon BJC-4300	£175
Canon BJC-4550 (A3)	£255
Canon BJC-4650 (A3)	£279
Canon BJC-5500 (A2)	£535
Canon BJC-620 (720dpi)	£220
BJC-7000 (1200x600dpi)	£295
Epson 400 (720dpi, 3ppm)	£159
Epson 600 (720dpi, 4ppm)	£209
Epson 800 (1440dpi, 7ppm)	£270
HP LaserJets 6L (6ppm)	£295
HP LaserJets 6P (8ppm)	£585

Add £47 to above printers for TurboDriver

Portable Computers

Carriage: a=£2, b=£6, c=£8

Pocket Book II (1Mb)	£245b
NEW Psion Series 5	
- includes PsiWin Link	
Psion 5 8Mb RAM	£480c
AutoRoute Express	**£50a**
- one of the best packages for the PB/3a	

A-Link	£59a	Mac Serial Link	£50a
Parallel Link	£34a	PsiWin PC Link	£80b
3/3a Mains Adap.	£18a	5 Mains Adaptor	£22a

Hardware Upgrades

24i16 Card (1Mb)	£450b
DMI50 Dual Midi Card	£138b
DMI50XGS Midi/Synth	£335b
Dual Serial Card	£104b
FPA for 25MHz ARM3	£67a
Joystick I/F (Not RiscPC)	£30a
Logitech Mouse (Acorn)	£30a
Movie Magic (1 only)	£175b
- Includes two VideoCD films	
RiscTV Card (Irlam)	£285b
RiscTV Keying Module	£46a
RiscTV Teletext option	£45a
Scart Cable (9 or 15 pin)	£12a
Serial Upgrade (A3000)	£27a
100W Stereo Speakers	£25c
Videodesk (Irlam)	£1145b

Scanners (Carriage £8)

ScanLight Video 256	£175
- suitable for A3000-A4000	

Epson Colour Scanners

Include !TWAIN & ImageMaster for RiscOS. Bundles include CorelPaint & OCR software for PC's/PC Cards and approp PC interface card.

GTx-5000 Para bundle	£235
GTx-5500 SCSI bundle	£300
GTx-8500 Para bundle	£525
GTx-8500 SCSI bundle	£550
GTx-9500 Para bundle	£620
GTx-9500 SCSI bundle	£660

I³ Networking (Carr. £6)

A30X0 EtherLan 102	£130
Archi EtherLan 514	£130
RPC/A7k EtherLan 602	£110

Add £17 to above prices for Access+.

Modems (Carriage £8)

Budget 56kVoice Modem	£95
Pace 56k Voice (Flash)	£140
Pace 56k Solo (Flash)	£Call

- The Solo modem can save fax & voice
- messages without a computer attached!
Modems come with a 9-25 PC wired cable. A3000/Archimedes req'r an Archi wired cable.

ANT Internet Suite II	£110a
Dual Serial Card	£104b
9-25 Archi or PC Wired Modem Cable	£12ea.a
3-way Serial T-Switch (incl. comm. cable)	£32b

Printer Consumables

Carriage: £2 for Cartridges, £8 for Toner

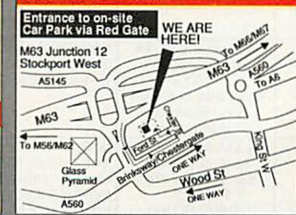
BJ-10 (BC-01)	£18	BJ-200 (BC-02)	£19
BJ-210 (BC-05)	£28	BJ-240 (BC-06)	£Call
BJC-600 Series		BJ-300 (BJI-642)	£16
BJI-201HCbk Black	£10	**BJC-4000 Series**	
BJI-201bk Black	£6	BCI-21Bk Black	£8
BJI-201C/M/Y	£8 ea.	BCI-21C Colour	£16
BJC-800		BC-20 Fast Black	£24
BJI-643 Black	£18	BC-22 Photo Cart	£34
BJI-643C/M/Y	£23 ea.	BC-22 Photo Kit	£39
HP DeskJets-500 ser.		**HP DeskJets 600 ser.**	
Mono	£23	Mono	£25
Colour	£25	Colour	£27
Eps Stylus Black	£16	Eps Stylus II Black	£20
Eps Stylus Colour	£26	Eps Stylus II Col'r	£26
Laser Toner		C3903A (LJ5P)	£64
EP-L (LBP-4)	£64	HP92274A (LJ4L)	£60

Terms & Carriage

Carriage: To benefit personal callers to our showroom carriage is itemised seperately. The carriage indicated is for single items. Please call us for total carriage when ordering more than one item since it is not cumulative.

Terms: All prices include VAT except books. Carriage is not included unless otherwise stated. Carriage charges apply to mainland UK (excluding remote areas, Scottish Highlands, Chann Isles, IOM), elsewhere at cost. Orders MUST be accompanied by a phone number. Prices and spec's subject to change without notification. Goods subject to availability. Goods not offered on trial basis. Restocking fee on non-faulty returns. Educ Inst official orders accepted. E&OE.

Where to Find Us



Books (No VAT)

Carriage: a=£2, b=£6, c=£8,

Acorn RISCOS3 PRM's	£99.95c
Acorn Volume 5a PRM	£29.75b
Acorn BBC Basic VI Guide	£19.95b
Acorn RiscPC Tech Ref Manual	£49.95c
Budget DTP (Dabs)	£5.00a
'C' A Dabhand Guide (Dabs)	£5.00b
RiscOS 3 First Steps (Dabs)	£5.00a
Wimp Programming for All (Beebug)	£10.95a

CD-ROM's

CD software for RiscOS

ArtWorks on CD (CC) £105b	
Childrens Micropedia (Kingfisher)	£72b
ClipArt CD 1/2 (CC)	£21a each
Dinosaurs (Microsoft)	£50a
Dune II (Eclipse)	£32a
Granny's Garden CD	£37a
Guardians of the Greenwood	£55a
Hutchinsons Encyclopedia 92 for RiscOS	£19a
Hutchinsons Encyclopedia 97 for PC only	£19a
Kiyeko	£36a
Musical Instruments (MS)	£50a
My 1st Incred. Amazing Dictionary (DK)	£39a
PB Bears Birthday Party	£39a
RiscDisc Vol 1 / 2 / 3 CD	£15a / £20a / £25a
Simon the Sorcerer CD	£32a
The Way Things Work (DK)	£50a
TopicArtCD (DTP)	£15a
Ultimate Human Body (DK) **Limited Offer**	£40a

Applications

Carriage: a=£2, b=£6, c=£8

Acorn C/C++ (Acorn)	£229c
Advantage (Longman)	£51a
ANT Internet Suite (ANT)	£110a
ArcFax (David Pilling)	£33a
ArtWorks (CC)	£105b
Card Shop (Clares)	£23a
Chameleon 2 (4Mation)	£39a
Compression (CC)	£31a
DataPower2 (IOTA)	£165b
Disc Rescue 2 (Look)	£43a
DrawWorks Designer (iSV)	£29a
Easy C++ (Beebug)	£112a
Eureka v3 (Longman)	£105b
FastSpool+ (WSS)	£17a
FireWorkz Pro (Colton)	£159b
Font FX 6 (DataStore)	£30a
Hatchback (4Mation)	£39a
HTML Edit 3 (R-Comp)	£47a
ImageFS2 (Alt Publ)	£43a
Image Outliner (IOTA)	£55a
Impression Style / Publisher	£83b / £136b
Impression Graphics Loaders (CC)	£39a
Impression Text Loaders (CC)	£39a
MacFS / MacFS Lite (CC)	£105a / £51a
Mr Clippy (iSV)	£19a
OmniClient II (Acorn)	£85b
Optical Manuscript	£265a
Ovation Pro (Beebug)	£175c
PC Pro (add £10 for PCExchange)	£38a
PC Sound Professional (R-Comp)	£28a
Personal Accounts (Apr)	£45a
PhotoDesk Light (Spacetech)	£129b
PhotoDesk2 (Spacetech)	£249b
Prophet (Apricote) **(One only)**	£140b
RiscCAD (Davyn)	£240c
S-Base2 Developer (Longman)	£100c
Sibelius Junior	£55a
Sibelius 6 / 7Stud / 7	£110b / £445b / £899b
Sleuth2 (Beebug)	£105a
SparkFS (Pilling)	£24a
Speech 2! (Superior)	£24a
StrongGuard (ARMClub)	£24a
Studio24 Pro (Pineapple) **(One only)**	£105b
Textures Professional (R-Comp)	£19a
Touch Type (IOTA)	£42a
Top Model 2 (Spacetech)	£145a
TurboDrivers Canon/HP or Epson(CC)	£50b
Vector (4Mation)	£67a
Web Designers Toolkit (R-Comp)	£28a
XStitch2 (iSV)	£33a

Games (Carriage £2)

Alone in the Dark (Krisalis)	£32a
Birds of War (4D) 2Mb	£30a
B H P (TBA)	£28a
Break 147/Superpool (4D)	£30a
Carnage Inc (4D)	£16a
Chocks Compendium (4D)	£30a
Crystal Maze (Sher)	Floppy £28 / CD £32a
Cyber Chess (4D)	£16a
Doom Trilogy New!	**£33a**
Drifter (4D)	£30a
Dune II (floppy) (Eclipse)	£30a
Empire Soccer (Maglm)	£24a
E-Type Compend. (4D)	£19a
E-Type 2 (4D)	£30a
Exodus (Artex)	£25a
Fire & Ice (Times Warner)	£23a
Global Effect (Eclipse)	£28a
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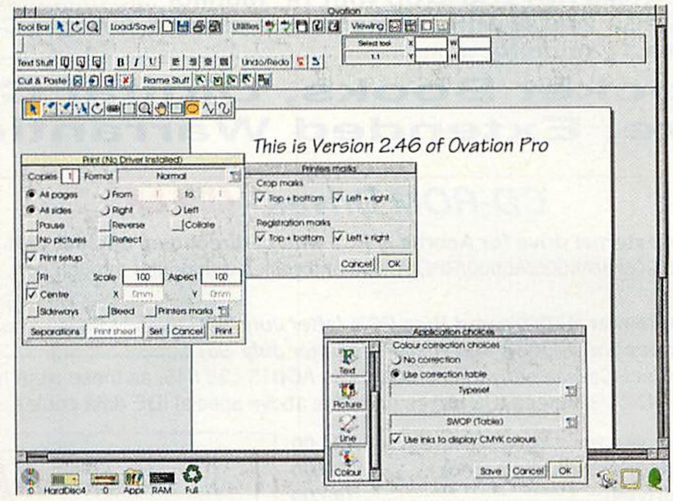





Ovation – take a bow

Version 2.46 is the latest update to the desktop publishing package *Ovation Pro*. New features abound, many of which have been expected for a long while, but most users will find the improved stability and numerous bug fixes more significant than the increased functionality of this release.

The main addition is the Colour Supplement. This can be compared to the 'Plus' part of Computer Concepts' *Impression Publisher Plus* software which allows viewing and printing of colour separations and image processing for professional printing purposes.



The structure of *Ovation Pro* is such that separate applications, called applets, can be built into the package without having to rewrite the main application code. Applets such as import and export filters, a start sequence 'Hint of the Day' application and indeed the Colour Supplement, greatly enhance the basic program, and older applets have been improved since they first appeared.

When spending hours and hours in front of your monitor designing page layouts using DTP software, one of the most tiring problems is that of a bad user interface. *Ovation Pro* was previously slated for its single line horizontally scrolling button bar, but this has been amended by the implementation of multiple row button bar capabilities and the customisation of the button bars. As in previous versions, you can design your own buttons that appear and perform to your specification, but now they can be organised within the window with much the same flexibility as many PC products offer.

Other improvements include more keyboard shortcuts, direct dragging and dropping of text files into *Ovation Pro* documents, an *ArtWorks* file loader and advanced object handling.

Ovation now looks and feels much closer to industry standard DTP suites. On a Risc PC, especially with a StrongARM, the application is very swift, even in heavy use. Considering that *Impression* was very often quicker than comparatively fast PCs or Macs running *Quark* or *Pagemaker* in real world tasks, the fact that *Ovation* is faster than *Impression* in almost every area, be it redrawing massive bodies of text or moving graphics around the screen, makes *Ovation* very quick indeed.

However, the lack of a decent virtual memory system for RISC OS makes dealing directly with professional quality bitmaps a stumbling block for a program that fares very well against any DTP and many wordprocessing programs, irrespective of platform. On the Acorn platform it stands alone as currently the best DTP software you can buy.

Beebug
Tel: 01727 840303

Picture of the month

If someone was to average the ages of all the Pic of the Month winners, I'm fairly sure the answer would be in the low twenties or high teens. This month, 72 year old Wally Varley from Leeds was certainly not born in the computer age, but has produced this stunning vector graphic of the 12th Century Chinese swordsman hero, Joe Fei.



Wally actually sent in a Corel *Xara* file, which we have saved out as a bitmap and converted into an Acorn sprite. Wally explains his love of the *ArtWorks* application written by largely the same team that went on to develop *Xara*, and how he purchased a Risc PC in order to run *Xara* using a PC co-processor card, to achieve the effects that *ArtWorks* cannot do. He used *Xara* to add the fractal fills of the background and clothing, and for cropping the areas of chain mail.

Remember that all winners are not only awarded £20 but can also claim a free copy of the superb *Phantasm* colour manipulation for use with *ArtWorks* from Astute Graphics.

Dr Fonty

Hot on the heels of *FontFiend*, *Dr Fonty* is a less complex and extremely easy-to-use font editing package for those who wish to tweak and create their own font sets. iSV have priced this package low to encourage the enthusiast, allowing the extremely powerful high spec *FontFiend* to remain a completely separate product for the more serious font creators out there. *Dr Fonty* costs £31.50 (fully inclusive).

iSV Products
Tel: 01344 455769

Contacting me

You can contact the graphics and DTP page by writing to me, Jack Kreindler, at *Acorn User*, Media House, Adlington Park, Macclesfield SK10 4NP, or by e-mail to augrafix@idg.co.uk



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comms

V.90 – Analogue comms for the '90s and beyond

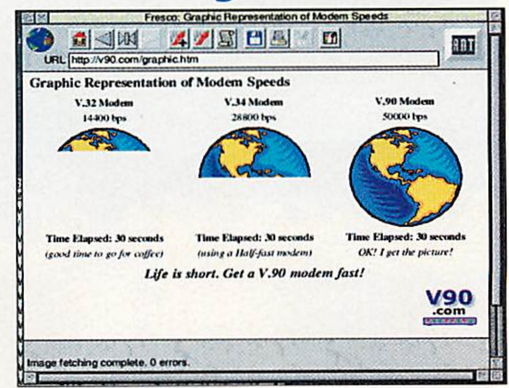
On 6 February 1998, the International Telecommunication Union in Geneva reached agreement on the final specification of the 56kbps modem standard, which had previously been called V.pcm. This is the shortest time ever taken to reach a consensus and initiate the formal approval process to a communication standard.

The new standard is called V.90, and harmonises the two competing proposals which were submitted to the ITU-T last year. We know these as *K56flex* from the Rockwell/Lucent Technologies camp, and as x2 from 3Com/US Robotics. The final ratification is expected in September 1998.

Owners of 56kbps modem based on either of these standards will probably be able to upgrade their modems be compatible with V.90. For some months, 3Com/US Robotics have been pledging free upgrades to add the new standard to existing x2-capable modems.

In the US, new V.90 modem products are 'on the trucks and rolling out' as colourfully put on the 3Com website at http://www.3com.com/56k/ You can check on forthcoming UK upgrades at http://56k.3com.uk.com/pages/info.html and some are available already.

On the other hand Boston, Massachusetts-based Zoom Telephonics have announced their *DualMode™* model FAX modem that automatically negotiates V.90 or K56flex as required. More Zoom information is at http://www.zoomtel.com/ and look at http://www.56kstandard.com/ for Hayes information. For more information about V.90 go to http://v90.com/



404 Not Found? No Europe on v90.com

The small print

Like *K56flex* and x2, the V.90 standard is asymmetric in that the data rate can only reach 56Kbps downstream from an ISP with an all-digital connection to the digital telephone network. This will be fine for most Internet users using the Web or downloading by FTP. Data flowing back to the ISP can only reach 33,600bps with V.90 and will normally only be in small bursts.

Upload speeds to FTP and Web servers will not improve, and neither will calls to phone-based Bulletin Boards. You might just notice an improvement when uploading by FTP to Arcade BBS during Weekend Internet if you were sending from a network login. In the US, the FCC limits the downstream speed to 54Kbps, but in the UK we may be able to exceed their speed limit.

Before 6 February 1998 we had two 56k standards. Now it seems we have three, at least for a while.

Socketeering it yourself

Designed by Matthew Bloch to be "a stress-free way of connecting an Acorn machine to the Internet", *Socketeer* enables you to construct an Internet access package using your own choice of applications and clients. The program will dial and connect your Acorn 32-bit machine to one or more Internet Service Providers, then lets you launch your selection of Internet client programs.

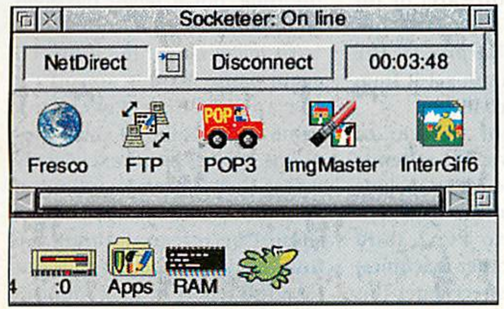
For a website that I maintain in Hong Kong, I have configured the program to connect to a UK ISP offering x2 modem standards, and set up the *Socketeer* window to offer my personal selection of commercial and freeware programs that I need for that job; *Fresco©*, an FTP client, *!POP*, *ImageMaster*, and *InterGif6*.

All the connection protocols are cleverly handled without scripts, so configuring *Socketeer* requires little more knowledge than when setting up other commercial and freeware Internet suites. Some brain work is required when choosing the applications to be launched and entering their pathnames into the Launcher text file, but such self-education never hurt anyone.

Socketeer can be used with the *Acorn* or *FreeNet* Internet stack applications and requires the Acorn *Toolbox* and Clan *Resolver* modules, the Acorn *PPP* module or Sergio Monesi's Shareware PPP driver to be installed and running from the new "Risc PC" *!Boot* sequence.

Almost all ISPs now offer PPP connection, and they should already have given you all the set-up information *Socketeer* needs, or will usually help if you ask for specific items. The program can also connect automatically at specified times while monitoring activity.

Socketeer offers a simple way to tailor an Internet suite to suit your needs. You can download *Socketeer* from Matthew Bloch's attractive website at http://www.soup-kitchen.demon.co.uk/



Socketeering it to me

Come to Tonga

V3 Redirection Services have registered domain names for the South Pacific island of Tonga, whose country suffix is .to so they're offering Web redirection to snappy addresses such as http://come.to/my_page.

Their free registration option requires you to add a small banner image to your registered homepage that leads visitors back to their site. In order to test their service, I have registered http://welcome.to/thecommspage so you can see how it looks.

V3 Redirection Services
http://come.to/

Illusion is no illusion

Illusion Web Design provides website creation with special support for Acorn users. They'll also accept images, graphics and text in standard Acorn formats – *Drawfile*, *Sprite*, and so on. Their sites are designed to work with many browsers using up to HTML 4.0, but will as they put it, 'degrade gracefully' when necessary. Prices will be quoted on application, but a special 20 per cent discount will be given on proof of use of Acorn RISC OS, on orders made before 31 May 1998.

Illusion Web Design
Web: http://www.illusion.co.uk/web/
E-mail: web@illusion.co.uk

New Acorn service

The Acorn News Service is a new independently-run mailing list that aims to deliver up-to-date news on products and services in the Acorn world. Operator Eytan Abrahams assures me that ANS is intended to complement but not compete with comp.sys.acorn.announce, and one hopes that it won't become a purely advertising medium.

ANS is in no way connected with, nor supported by, Acorn Group Plc. All Acorn users are welcome to provide news items which can be contributed by visiting the ANS website.

Acorn News Service
http://www.acornusers.org/ANS/

Contacting me

Keep sending me interesting URLs for the next yoUR List by e-mail to david@arcade.demon.co.uk, or mail #2 on Arcade BBS 0181 654 2212.



Put it away Paul

This month's mini-desktop snippet arrives in the form of Gerbilsoft's *PutDir*. Add it to your boot sequence and then drop file icons onto the *PutDir* task icon to add the said file's path to a writable icon. Not universally useful, but it certainly saves typing when using one or two apps. Browse to http://arcade.demon.co.uk on a weekend and pick it up.

Compilation complete

Stu Smith has developed a RISC OS version of the Lcc, C compiler which is available as Freeware. As Stu describes, 'The compiler is in a usable state but contains at least one fairly minor bug in the front-end which is being fixed by the authors. Also available on the site (see below) is an assembler, linker, and port of UnixLib 3.7b, since the system uses a different object format to AOF.'

Lcc isn't particularly fast – if you want raw speed you'd be better off using Acorn's Norcroft compiler or the freeware Gcc compiler. But Lcc has been extensively tested on an old A310 with only 2 megs of memory so may well be useful for users with low spec machines where memory is a problem.

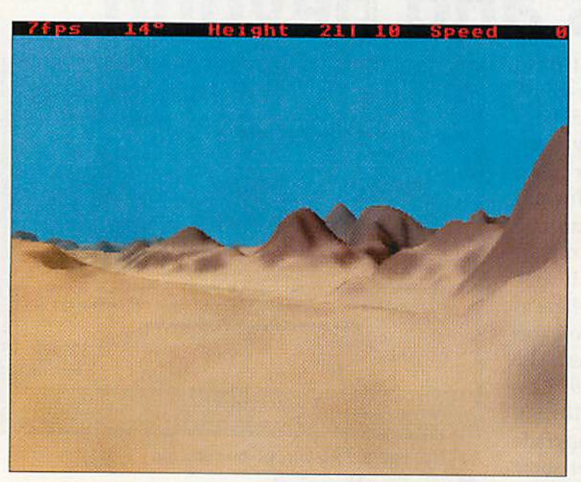
You can contact Stu Smith at S.D.Smith@exeter.ac.uk or check his Web pages at http://www.geocities.com/SiliconValley/Lab/4330/ for more information. As well as the compiler you can also pick up all the associated applications like the Q-System Assembler and other programs like *DigiGraf*.

Doc Link in the house

DrLink is perhaps unsurprisingly a linker for use with compilers that generate object files in Acorn's AOF format. This makes it ideal for use by people with non-standard compilers who don't have the Acorn linker.

Coder Dave Daniels has put a lot of work into development and testing to produce a quality product that's well worth a look for the compiler users among you. *DrLink* is on Arcade for a speedy and worthwhile download.

Comanche



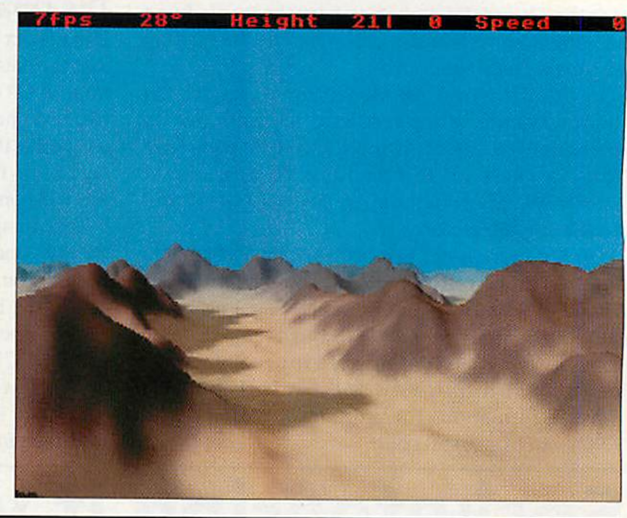
Flight sim fans will be well aware of the popular PC helicopter game incorporating stylish voxel landscapes by the name of *Comanche*.

Coder Peter Teichmann has put together a little RISC OS demo that lets you fly around a *Comanche*-style landscape. Unfortunately you don't get to shoot anything with Hellfire missiles, but you do get to play with some rather nice graphics.

Running on a StrongARM, the code produces a slightly disappointing 7-10 fps in full res mode, but you can reduce the x res to give a faster speed. Without a StrongARM I'm guessing that it's really going to struggle. The quality of the rendering is quite good with depth shading and a clipping setting that gives you plenty of detail to the horizon.

Comanche runs in 16 million colours so the colour shading is silky smooth. Unfortunately I can't really tell you any more about the origins of the code (is it C++ ported from the PC, or natively written on Acorn?) as the help file is in German and I'm not particularly fluent to say the least. If anyone would like to translate Peter's words of wisdom and drop it in an e-mail to me, I'd be very grateful.

Comanche is available for download on Arcade BBS and you can contact Peter at sol@space.wh1.tu-dresden.de



Filepro

Stephen Revill of Acorn Computers has written to me following my recent coverage of the thumbnail image browser, *Thump*. He says '...instead of a sprite file having the normal sprite icon in a directory display, use a thumbnail of (say) the first sprite in the file.' You can already do this with JPEGs using a very nice utility called *Filerpro* which I mentioned in the column some months ago.

As well as providing a whole range of hot keys and extras on your filer windows you can also do the 'thumbnail as icon' trick that Stephen describes. What we need now is support for sprite files as well. Stephen also suggests using processing to keep image quality higher and effective caching of the thumbnails to speed up directory redraws.

And a final but quite important tip from Stephen – he suggests the filtering of filenames to ignore things like !Sprites files to avoid filling the iconsprite memory with duplicate icons. So that's the challenge for *Filerpro* authors Warm Silence Software, or for *Thump* author Rick Hudson. Any takers? *Filerpro* is the business and you can get it from http://www.wss.co.uk/

While I've got the ear of someone at Acorn, I'll reiterate my request for Acorn to include some tasty PD on the hard disc of the new Risc PC 2 (and indeed, all their other machines) when it hits the streets later this year. With RISC OS development going relatively slowly, it would seem sensible to offer applications like *Filerpro*, the invaluable *PinFilter* and the *Help* application beating *FlHelp*.

All it takes is a few hours to compile some programs and check with the authors and then Bob, as they say, is your Uncle. Sorry to moan on about this all the time, but it seems too good an opportunity to miss.

To make up for the moan I'll again praise Acorn's support for the approaching Revelation demo competition at this year's Acorn World. I can exclusively reveal that DFI are working on an announcement demo which should be released about the time you read this. Watch out for a full report in next month's column.

DrWimp

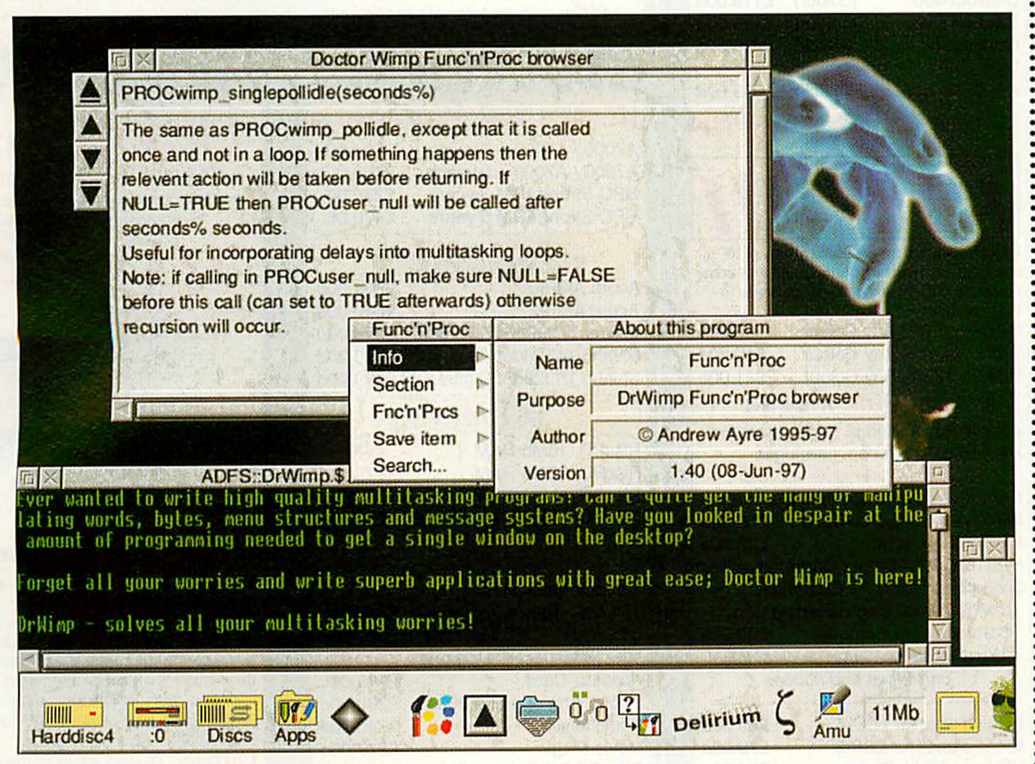
Yes, it's yet another library to help you write desktop programs. Have we not already got enough of these devices? Are we not completely overrun with them? Aren't you getting bored looking through a new one every three months, Paul? While I could probably answer yes with some degree of truthfulness to all of those questions, I have to admit that Andrew Ayre's *DrWimp* package is quite a nice contender in a field that's milling with quality software.

DrWimp essentially operates as a set of BASIC functions that make it much easier to write multi-tasking desktop programs. The feel of the complete package is much more than that however, as Andrew has included a whole suite of utilities, documentation and tutorials that comprises everything you need to put together desktop code fast.

Given that the libraries are generally well-written, the most important part of a package like this is the documentation. With a poor set of instructions, what purports to be a programming aid of this kind can often make life more complicated than just hacking out the code with no aids at all. Andrew deals with this problem well by keeping the initial software details pretty concise and concentrating on a hefty amount of tutorials. The best way to learn is by example, and these tutorials do the job well. You also get the obligatory reference section of functions.

I often find, as a programmer, that while I have the general knowledge of how to go about writing some code, I'm always forgetting syntax. Going between different languages like BASIC, C++ and Pascal you can often get a little mixed up and a *StrongHelp* style, set of reference files is very useful. Andy provides this with his Func'n'Proc utility. Simply whop in your function to search on and you get the full details in terms of parameters and function operation. Nice.

All in all a very handy package for desktop programmers. Download it from http://www.soton.ac.uk/~aij295/groover. While talking about this kind of package, what's the user's view on these kind of applications? How popular are these things with coders, and which is your favourite set of libraries? I'd love to hear reader's opinions, so please drop me a mail at the address below.



Lunar

Lunar is a complete *Wolfenstein*-style arcade game available as freeware. You've got masses of corridors and levels to explore, lots of different weapons and a reasonable set of controls to move your player around with.

So, what's the catch? Without wanting to sound harsh, the graphics are very poor and it just isn't playable. Whether it's the way you seem to be able to walk through the doors to the dodgy teleportation style of movement of the baddies, it's just not my cup of tea. *Lunar* has the PD page thumbs down, but if you want to give it a try you can locate the prog in the games section of Arcade BBS.

Utilisation

'Programmer, freelance computer journalist, broke student and bar tender', Andy Bourne, requests that you point your browser to his Web pages at http://www-student.lboro.ac.uk/~phajb/ to check out his collection of RISC OS utilities. These include '*Help*' which automatically 'HTMLises' help text and drops it into your browser, and the handy *CDrepeat* which loops CDs even when you're single-tasking. Check it out.

Anti-Exit

The shutdown option from the task icon on the iconbar can be a little final at times. Especially when you clicked on it by accident while trying to get the task manager up. Help is at hand from *Anti-Exit* which checks with you first by providing an 'Are you sure' box. If you need the security, head for the utilities section of Arcade.

Thump

Further to my review of top coder Rick Hudson's *Thump* application, Rick is quick to point out that the bugs described and suggestions made in the review have already been sorted, in what is now a very capable program. It also works with *ImageFS* to provide thumb-nailing for a comprehensive range of other image formats. Browse to http://www.geocities.com/CapeCanaveral/Lab/6722

Hello

As always you can contact me with ideas, comments, suggestions, corrections and general heckling at the usual address below, but the important thing is to repeat my regular requests for software authors to contact me.

With many authors holding their software on their own websites it's very easy to miss outstanding pieces of software that deserve a mention on these pages. So if you've written some groovy apps or used someone else's that should be covered here, please drop me an e-mail.

Contacting me

You can contact the PD page by writing to me, Paul Wheatley, at *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield, SK10 4NP. Or preferably, by e-mail to aupdpage@idg.co.uk

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memory upgrade 4mb	new	£65.00a
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A3010		
Floppy Drive	new	£90.00c
Keyboard	S/U	£20.00b
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memory upgrade 1-4mb	new	£69.00a
PCB	Refurb/Exch	£120.00d
A3020		
Floppy Drive	new	£90.00c
Keyboard	S/U	£20.00b
memory upgrade 2-4mb	new	£59.00a
PCB	Refurb/Exch	£120.00d
A4000		
Floppy Drive	new	£90.00c
memory upgrade 2-4mb	new	£59.00a
PCB	Refurb/Exch	£120.00d
Power Supply	Refurb/Exch	£40.00c
A5000		
Floppy Drive	new	£90.00c
Keyboard inner	S/U	£20.00b
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PCB	Refurb/Exch	£139.00d
Power Supply	Refurb/Exch	£40.00c
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Tune in on your PC card

Judging by the mail and the degree of interest in Mike Cook's pages it seems a large number of Acorn owners are, shall we say, a bit on the techy side. No surprise really since a bit of technological nouse is helpful when making sensible decisions on operating systems and choosing RISC OS!

Sadly RISC OS can fail us in some areas as the software just isn't available – hence the need for PC cards. There is a growing interest in audio so I've dedicated the page to the adventurous audio/music sort of person and I've been checking out what can be done with your card that isn't available under RISC OS.

Electronic circuit design

If, like me, you have some knowledge but no great expertise it's easy to design circuits that fry components and take many frustrating hours of fiddling before they work as intended. Better by far to do the first level of design on the computer – *Easy PC* from Number One Systems (tel: 01480 461778, e-mail: sales@numberone.com) to the rescue. The full professional version comes in three parts which offer linear circuit analysis, digital logic analysis and a PCB CAD system.

I've tried the DOS based version which loads easily, but my guess is it probably works most reliably on a full DOS installation rather than in a Windows 95 DOS box. This software is very comprehensive and will certainly give you all the tools you need to design some very complex electronics and test it all before committing to wiring up expensive hunks of silicon.

If I have a reservation it is that the system is aimed at pro users and therefore is loaded with facilities and possibilities that take some time to learn. It is also an old style DOS program with an archaic user interface that is a definite step backwards for those of us used to WIMPs.

I can't pretend to have got to grips with it all by any means yet but maybe help is at hand. I have just heard that a Windows 95 version is now available. This should offer a considerable improvement as regards ease of use. With the power of the old software allied to a modern user interface, this really is a program you should check out. The DOS version is available through Maplin. I presume the Win95 edition will be too.

Loudspeaker design

This subject has always intrigued me – it's the one bit of HiFi construction still realistically open to the enthusiast – especially if you want something out of the ordinary without a price tag more suited to a small car. I rooted around on the Net and found a few old DOS programs that would do the trick – but these were aimed at people already in the know.

Then I found True Audio's *WinSpeakerz* – a Win95 version of an old pro design package. It is superb. Once you have forgiven the database for being both a bit out-of-date and highly American, the software is quite simply excellent. It's easy-to-use and as far as I can tell, equally good in terms of its design parameters.

Drivers can be selected from an editable database, choose which sort of cabinet to use (from closed box, via ported designs to tuned box bandpass types), select driver configuration (where even multiple isobarik designs are catered for) and then tweak the figures to check out bass extension, plot phase delay, impedance and cone excursion. Then you can use tools to design the box, the vents and the crossovers.

The manual is also excellent. It gives a brief, but very clear insight into speaker design, the strengths and weaknesses of different configurations, how to deal with room loading and details of crossovers. Tel/fax: 001 760 480 8961.

Jammin'

Given that the above is somewhat technical, here's an easy way to get some light relief. *Jammer Pro* from Soundtrek (tel: 001 770 623 0879) is a piece of software which provides a lazy way to make music to play through your home designed amplifier and speakers.

This is MIDI software with a difference – it does the composing for you, but that's not to say you get off scot free. You still have to select the style, enter where you want different instruments to play, define such things as intro, middle eight and so on, then put in a chord sequence. You then tell it to compose and that is exactly what it does.

You may not like what it does but that's fine as you can have another go, ask it to try just a section again or change the instruments, style or whatever until you have something you like. This is fun and could also be very useful for providing copyright-free background muzak. But remember, you will need MIDI playback (eg ESP's *MIDISynth* or MIDI card plus synth) and RComp's *PCSoundPro* to patch Windows MIDI output to RISC OS.

Contacting me

You can contact me, Mike Buckingham, by post at: *Acorn User*, Media House, Adlington Park, Macclesfield SK10 4NP or by dropping me an e-mail at: aupcpage@idg.co.uk

PCPro bug reduction

News from Aleph1 is encouraging with regard to developments of *PCPro*. General bug reduction continues and some of the bigger problems (mostly omissions) are, I'm told, being addressed. First to be available should be the 32-bit CD-ROM drivers – the 16-bit versions do cause problems with some CDs now. This should be available free.

Laurie van Someren also tells me that work on VESA2 and Direct X is continuing and release is likely 'in a few months' as is support for Windows NT. These are all substantial pieces of code and are likely to be a chargeable upgrade although prices aren't set yet. Once those are in place it would be fair to say that the cards should support almost all software and the real limitation will be processor speed for games. But that, I suspect, will only be soluble with RISC PC II.

Sounding better

PcSoundPro is an essential add-on for anyone using their PC card with software that uses sound to any degree – specifically for MIDI and for DOS games like *Red Alert*.

RComp are now busy working on a new version – *PCSoundPro 2*. This should have at least one significant enhancement – a facility to enable Windows users to use the Creative Labs SoundBlaster Drivers rather than the Acorn ones in current use. This should give better sound quality and a higher degree of compliance allowing the use of such things as mixers and the volume control, plus improved compatibility with DOS windows. As I write, I'm told it's mostly finished and is being debugged and tested. Contact RComp on 01925 755043 for details.

Timing faults

One last point. Having had no obvious problems with card timings before – you may recall that many older Risc PC/PC Card combinations didn't function properly with StrongARM – I have recently had just such a failure with a fast PC card in an SA equipped machine.

Such faults usually manifest themselves as General Protection Faults which will usually cause the program to shut down. Apparently problems with CD access, especially on replay of animation, is the usual give-away for timing faults.

Aleph1 are investigating why such things happen and I promise to let you know what transpires!

A step in the right direction?

The first bit of news this month could be regarded as either good or bad depending on which way you look at it. Sibelius Software, famous for their score writing package *Sibelius 7*, have finally announced that they are working on its successor – a program which is going to be called *Sibelius Virtual Manuscript Paper* (or *Sibelius VMP* for short).

Rather than just an upgrade to the existing package, *Sibelius VMP* will be a completely new program written from scratch. It is to be coded in C++ rather than machine code, which in turn makes it easier to maintain. This will also mean that the new program will be platform-independent, i.e. Sibelius will be able to produce versions for different machines such as PCs and Macs.

While this might be regarded as a step away from the Acorn market, it should, if done properly, help to raise awareness in the non-Acorn community of a third and extremely viable platform (i.e. Acorn). Also, if the long overdue Risc PC 2 turns out to be as powerful as promised, the Acorn version of *Sibelius VMP* should follow in the footsteps of *Sibelius 7* and become another 'killer application'.

Details about *Sibelius VMP* are rather sketchy at present although Sibelius have mentioned that they will include all features of *Sibelius 7*, plus a number of enhancements and refinements that have been requested by users. In these times of huge and faceless software corporations (of course mentioning no names), it's comforting to see a company listening to its customers and adapting its software as a result.

While on the subject of Sibelius, it's worth mentioning that they now have a new Web address which is www.sibelius-software.com If you're interested in *Sibelius VMP*, there's a mailing list which will keep you updated with regard to the progress and availability of the program. Just e-mail your 'snail-mail' address (including which country you live in) to info@sibelius-software.com and you should receive a brochure and Demo-CD when they're ready.

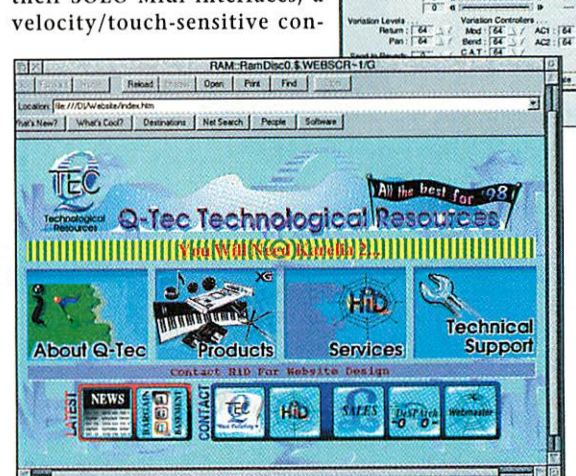
Q-tec go live

Continuing on the subject of new websites, Q-Tec have recently put their pages up on the Internet and there is plenty of interest for the Acorn music user. The site, which is at www.q-tec.demon.co.uk, contains a full list of all Q-Tec's products including a special area set aside for users of *Karelia 2*, their recently released XG-compatible MIDI file player/editor.

Another area which should be of use to the Acorn music user is a page called The Giles Files. This is a collection of musical pieces written by local (to Q-Tec) musician Laurie Giles, aimed particularly at the amateur piano/brassband/orchestra enthusiast. Laurie's pedigree, as far as music goes, is first-class having been both the conductor of the Cleveland Youth Orchestra and a classical radio presenter for the BBC's Metro Radio station.

Finally, by the time you read this, Q-Tec should have their entry-level music bundle available. This will include one of their SOLO Midi interfaces, a velocity/touch-sensitive controller keyboard (with full size keys) and a tone generator. No bundled software or prices have been announced yet, although up-to-the-minute details will be available in the news section of the Q-Tec website.

Q-Tec can be contacted at Unit 16, Brougham Enterprise Centre, Brougham Terrace, Hartlepool, TS24 8EY. Tel: 01429 890800, fax: 01429 890700.



15 minutes up for grabs

It appears to me that there are many people out there using Acorn computers for music and sound-related purposes, but it's not clear exactly what they are doing. If you're a budding composer using your Acorn computer to write music, create sounds or something else with a sonic connection, please get in touch at the usual address and let me know what you're up to.

I've reported in the past of *Sibelius 7* being used to compose complete scores for films, but I'm sure there are plenty of other uses just waiting to be uncovered. Obviously, the more interesting the project, the more I'd like to hear about it and I hope I'm not just going to get loads of reports about people playing with *Maestro*! If you think you have something that other people will want to hear about, now's your chance to be famous.

Tune of the month

This month's offering is a rather jolly ditty from the keyboard of Andrew Pontzen entitled *Rescued*. The tune is best described as ragtime, and features a nice honky-tonk piano melody with an acoustic bass accompanying. It's almost cartoony in its sound and an excellent example of a simple but effective piece of music.

It's a General MIDI (GM for short) track so it can be played back on any piece of MIDI equipment that complies with the GM specification. It can also be played back on either Expressive Software Projects' *Synth* or Michael-Dennis Bieman's *ReMIDI*, both of which are software synthesisers.



Contact:
You can contact me, Rob Miller, at the usual *Acorn User* address or by e-mail at: aumusic@idg.co.uk

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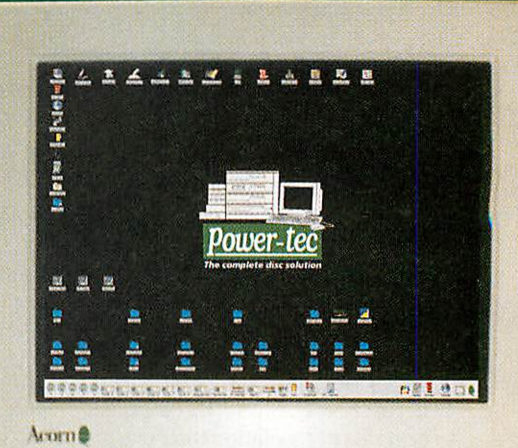
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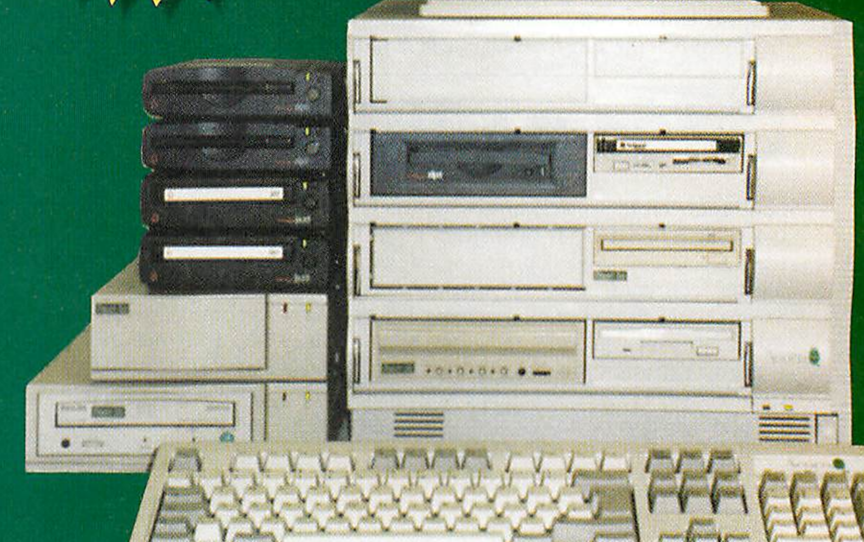
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Easy Animator – Release 2

Nicholas Marriott

Easy Animator is an animation program originally designed for use by primary school children, but now also suitable for almost any age from primary school to adult. An animation is split into up to 768 frames which are displayed at a user specified rate, these frames can be edited using built-in editing tools which are suitable for simple artwork but not complex pieces.

RISC OS 3.1 is required to run the program. An ARM3 and at least 2Mb of memory are strongly recommended. A hard disc is also useful. Interactive help is supported on most windows with a *!Help* application.

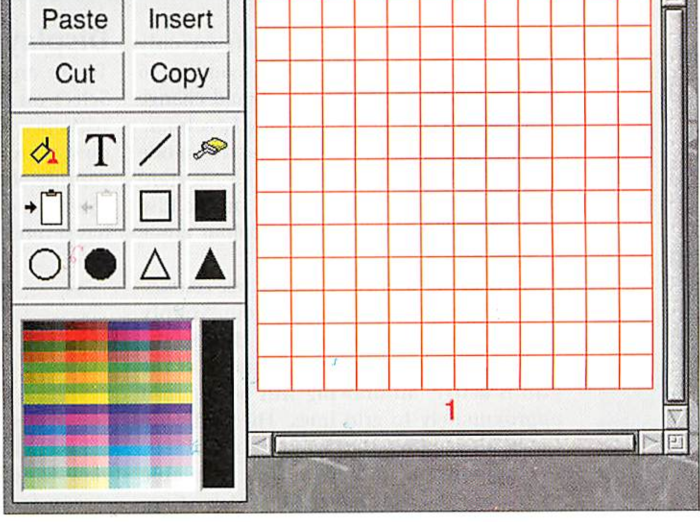
Getting started

Double-click on the *!EasyAnim* Filer icon and the *EasyAnim* icon will appear on the right-hand side of the iconbar and a window should open in approximately the centre of the screen. This is the frames window and attached to the left-hand side of it is the frames toolbox. The frames window displays all the frames in order, side by side and allows you to edit, move, copy and otherwise manipulate them.

Within the frames window you will at first see one large white rectangle with a red number below it, covered by a red grid. This is a frame, the red number and grid show that it is the current or selected frame as opposed to a non-selected frame which has a black number and no grid. To select a different frame, click below the required frame, on the number. All operations accessed from the frames toolbox work on this current frame.

Clicking on the icon on the iconbar with select will open the preview window and toolbox which displays the animation running and allows you to control the way it is played and step through the frames one at a time.

Clicking menu on the frames or preview window will open the *EasyAnim* main menu which contains many functions referred to throughout this document. The iconbar menu can also be accessed by clicking menu on the iconbar icon.



Manipulating frames

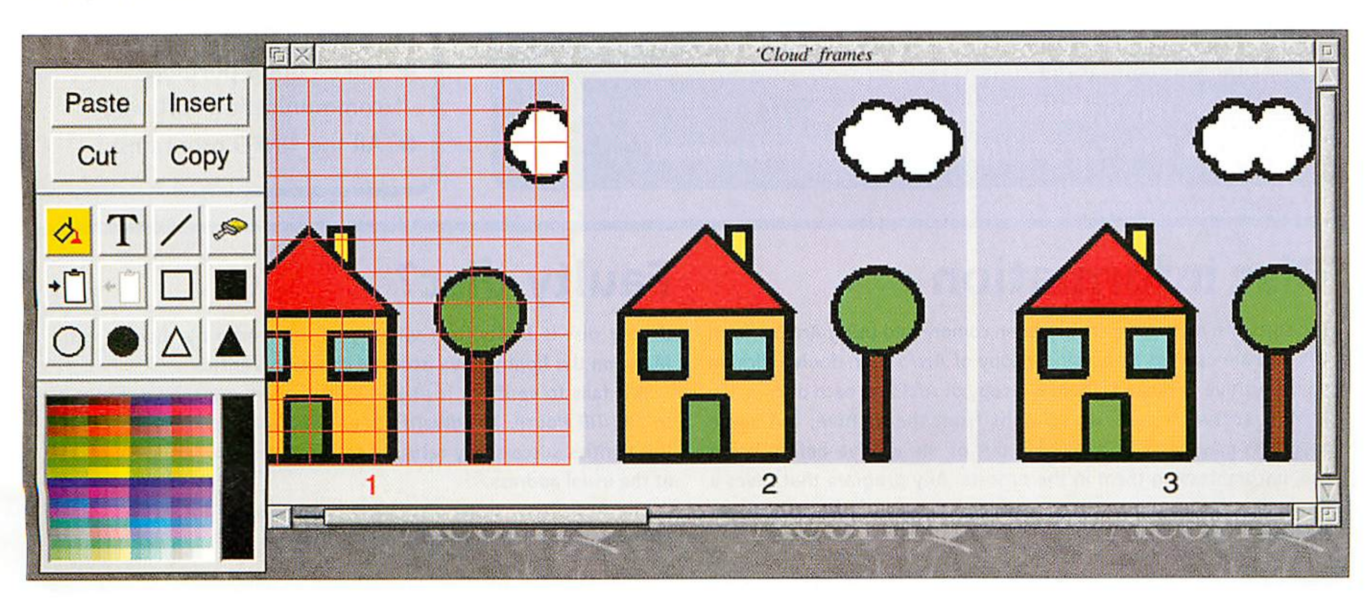
An animation can be made up of up to 768 frames or as many as will fit in memory. This section describes how to manipulate these frames using the tools on the frames toolbox and from the main menu:

• Copy can be performed by choosing Frame 'X' => Copy from the main menu, by pressing Ctrl+C or by clicking on the Copy icon in the frames toolbox. The current frame will be copied to the frames clipboard and any previous frame on the clipboard will be overwritten. A beep will be heard after a successful copy and the frame can then be pasted in again any number of times using the paste tool.

• Paste is operated by choosing Frame 'X' => Paste from the main menu, by pressing Ctrl+V or by clicking on the Paste icon in the frames toolbox. The frame stored on the frames clipboard will be pasted after the current frame. You can store a frame in the frame clipboard using the cut and copy tools.

• Cut can be performed by choosing Frame 'X' => Cut from the main menu, by pressing Ctrl-X or by clicking on the Cut icon in the frames toolbox. The current frame will be copied to the frames clipboard and then removed from the animation. To restore it again, use the paste operation.

• Insert is activated by choosing Frame 'X' => Insert from the main menu, by pressing Ctrl+I or by clicking on the Insert icon in the frames toolbox. A new, blank frame will be inserted straight after the current frame. This tool is similar to the paste tool except that a blank frame is inserted ➤





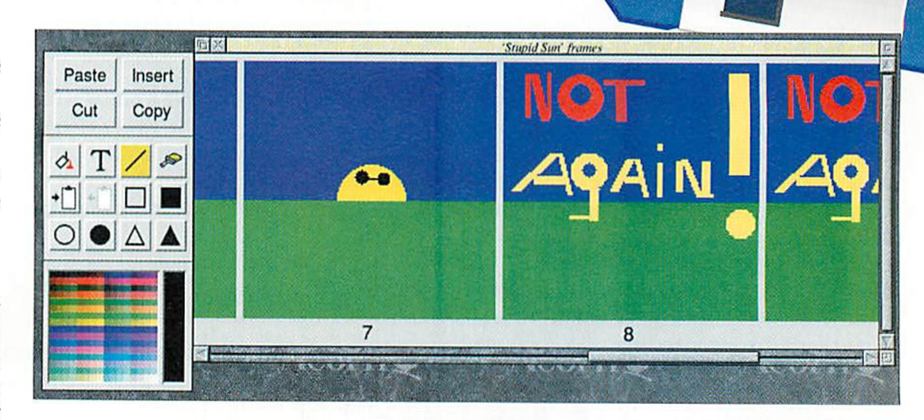
Easy Animator – Release 2

instead of the clipboard contents.

• Vertical flip turns the current frame upside down.

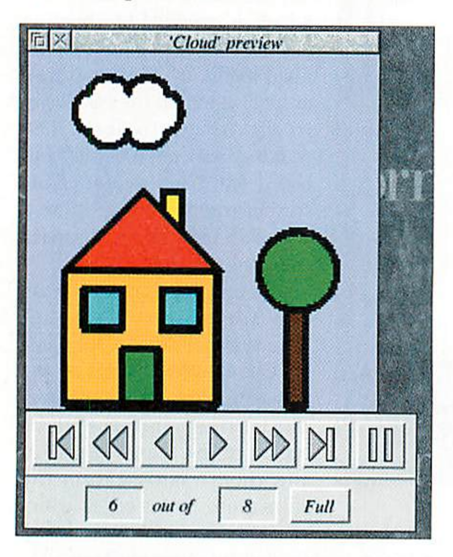
• Horizontal flip turns the current frame from left to right.

• Save, from the Frame 'X' => Save menu option, allows you to drag the frame to the Filer or another application.



Editing a frame

A frame can be edited using all the drawing tools in the bottom two-thirds of the frames toolbox. All these operations happen in the currently selected colour chosen using the 256-colour palette situated at the bottom of the frames toolbox. These colours are only accurately shown in 256, 32 thousand or 16 million colour modes so you should change to a mode of this type while using *EasyAnim*.



On older machines, a mode such as mode 28 for VGA monitors or mode 15 for standard monitors is recommended, on the Risc PC and A7000, the largest 256 colour mode is best.

There are 12 tools, just above these colours, that can be used to edit a frame. Simply select the tool you require then click in the place you wish to draw on the frame. If the grid is active, all drawing will be snapped approximately to grid lines. The grid state can be altered from the main menu.

The tools are similar to those available in *!Paint*, and you have fill, text writing, line drawing, brush, copy and paste block, various filled and outline shapes.

Displaying an animation

To see an animation in the desktop, click Select on the *EasyAnim* iconbar icon. This will open the aforementioned preview window, which displays the animation running considerable slower than normal. Affixed to this window is the preview toolbox, which has several video-style tools:

I<	Move to start
<<	Move backward one frame
<	Play backward
>	Play forward
>>	Move forward one frame
>I	Move to end
II	Pause

By clicking on the Full icon in the preview window, choosing Animation => Full screen from the main menu or pressing Ctrl-F, you can see the animation running at full speed. The animation is shown in the centre on a blank screen and all other tasks are paused. Normal activity is restored when a mouse button is pressed.

Further information is in the Manual file, or via the *!EasyHelp* application.

Freeware

- The Programmer's Reference Manuals on disc? Not quite, but six StrongHelp files to help you up the RISC OS learning curve
- Over 400 icons you can use in programs
- Update to the *!Multishow* program (needs *WimpBasic* modules)
- Sensible time, did you save that file *Yesterday*?
- *TextThing*, tidy up those foreign text files
- *!Xuen*, the recent *Acorn User* !Start revised and renamed

Regular items

- Mike Cook's portable communication software
- All the *INFO programs

Disc information

The software on these discs has been compressed using *ArcFS 2* from VTi, and are opened by running a copy of *ArcFS* then double-clicking on the archive to open it. There is a copy of *ArcFS* on each disc.

Most software will run straight from the archive, but some programs may need to be copied out of the archive before being run, uncompressing them in the process. Any program that saves a file to disc, for instance, will be unable to do so into the archives on the disc.

Faulty disc?

If your disc is faulty, test whether it will verify by clicking with Menu on the floppy drive icon and choosing Verify.

If it fails to verify or is physically damaged you should return it to *TIB, TIB House, 11 Edward Street, Bradford, Yorkshire BD4 7BH.* If it verifies successfully return it to the *Acorn User* editorial office at the usual address.

The *Acorn User* cover discs have been checked for viruses using *Killer* version 2.800 from Pineapple Software.

TEL 01727 840303 FAX 01727 860263 EMAIL sales@beebug.co.uk

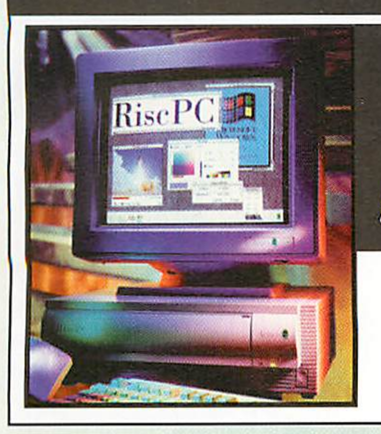
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1Mb VRAM (expandable)	£70.00
2Mb VRAM	£105.00
CD Drive Sixteen Speed IDE	£99.00
CD Drive Twenty Four Speed IDE	£116.33
CD Drive Twelve Speed SCSI	£170.38
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StrongARM Upgrade 233MHz (for old style RPC's)	£292.58
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SCSI II Interface	£175.00
PC DX4-100 Card with Risc PC (£351.33 without)	£233.83
PC 5x86 Card with Risc PC (£468.83 without)	£351.33
2 Slot Backplane (for 4Mb Risc PC)	£35.19
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!PC Pro Upgrade (incl PC Exchange)	£49.00

If upgrading the original 1.2Gb hard drive, deduct £80 from the following prices;

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4GB Drive SCSI	£787.25
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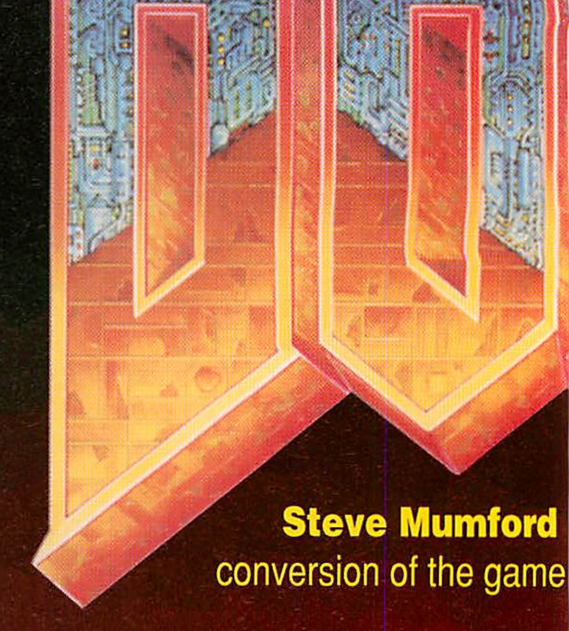
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Special

Steve Mumford conversion of the game

The fog and the darkness engulf you; the air is damp and stale. Unearthly cries reverberate through the pits and corridors, reaching your ears from every direction. Shuddering involuntarily as you pick your way through the broken wreckage of a storage room, you scan the darkness for any signs of the enemy. Suddenly, a low groan fills the air. Instinctively, you spin and take aim – a disfigured zombie lurches out of the shadows and attempts to grapple you to the ground. A dull roar from your



shotgun and the monster reels backwards, staggering through the detritus to collapse by the wall in a broken heap. Catching your breath, you search the body for ammunition before continuing into the depths of the maze.

The previous paragraph was brought to you in association with *AcornDoom*, converted by Eddie Edwards and published by R-Comp Interactive. Crashing down from the skies, the Acorn version of this all-time classic caused near hysteria and just a little bit of controversy in the newsgroups recently – but does the game deserve all the hype it's been given?

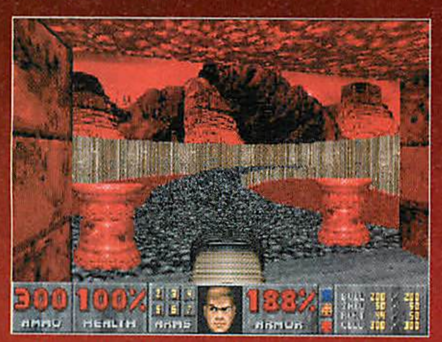
Doom's no spring chicken, there's no doubt about it, and although it was very successful in its day, some people might argue that we should be looking elsewhere for ground-breaking or inspirational material for the Acorn platform. However, having played the game long and hard over the last few weeks, I think I can safely say that *AcornDoom* displays both of the above qualities.

The game itself needs little introduction – a step forward from the likes of *Wolfenstein 3D* and a couple of paces behind *Quake*, *Doom* showed the populace of the PC world that it was possible to create a three-dimensional shoot 'em-up with an atmosphere you could slice.

Its levels were large and intricate, blending action and strategy carefully throughout each episode and building the tension as the end of each scenario grew near. Carrying a loose plot that brought together Space Marines, metademons and transdimensional gateways, *Doom* developed its own mythology that prompted countless people around the world to take part and create their own worlds. It's this essence that R-Comp needed to capture to make their conversion a success.

What's in the box?

The *AcornDoom* bundle deal is based on the *Depths of Doom* trilogy currently available for the PC, with three CDs containing the episodes *Ultimate Doom*, *Doom II*, *Master Levels for Doom II* and *Maximum Doom*. The box isn't what I'd call *petite* – since we're essentially buying into PC philosophy here, pretty yet pointlessly large cardboard boxes are the norm and this one is no exception. Bearing in mind the fact that the CDs are supplied in paper envelopes, the whole contents of the pack could be fitted into something not much larger than a videotape case, but I don't suppose one would get the same *frisson* of excitement when buying the game if fewer than three people were required to lift it.



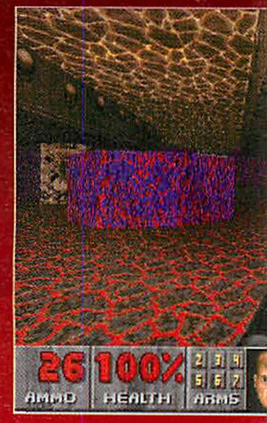
As well as the three picture-disc CDs, full PC manual and Acorn information sheet, two driver discs are supplied – the first contains the appropriate Acorn software to allow the WAD files to be interpreted, as well as including technical specifications for the networking components of the player and a couple of other widgets. The second holds a pre-prepared *Spark* archive of the 20 *Master Levels for Doom II*; although they're also supplied on the third CD in the bundle, they're not particularly accessible in that form to those without PCs.

Installation is a simple matter of running the !DoomInst application and deciding how much disc space you want to fritter away. The level files for *Doom* aren't small, and you'll need to find around 27 megabytes just to store the *Doom* and *Doom II* WADs themselves.

I've had limited success accessing the large WADs directly from CD – although everything works as it should, you get rather dramatic pauses here and there as the computer frantically hunts through the disc trying to find the texture for the wall you're rapidly running towards. Then again, I only possess a humble double-speed drive, and that really doesn't cut the mustard when it comes to the random access of files around 14 megabytes in size.

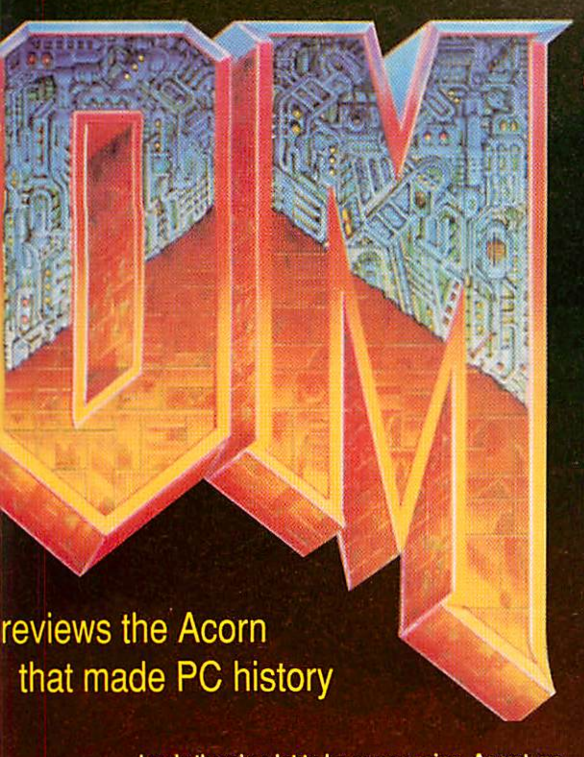
Playing the game

Once you've completed the installation procedure, starting a game of *Doom* is straightforward. The *AcornDoom* player is intelligent enough to discriminate between *Doom* and *Doom II* WAD files, so simply double-clicking on the WAD of your choice is enough to start the game. Alternatively, and for greater control, you can run the !Doom player itself to open up windows enabling you to choose the set of levels you want to load and the video resolution preferred. This method allows several patch WADs (such as those included in the *Master Levels* or the *Maximum Doom* collection) to be loaded at once, assuming they don't interfere with each other. This can only be a good thing when considering the *Maximum Doom* add-on pack – at over 3,000









reviews the Acorn that made PC history

levels there's a lot to keep you going. As yet, no network modules have been written but because of *AcornDoom's* 'plug-in' interface, it should be possible for authors to create a range of network support tools and make these available as simple upgrades, whether they're published on the Internet or sent out on floppy discs.

Obviously, this is one area where *AcornDoom* is weaker than it should be; however this problem is currently being addressed and I hope to bring you network progress reports in the near future.





High-resolution action

As mentioned earlier, the video mode used by *AcornDoom* is customisable, and you can choose to keep the basic resolution of 320 by 240 in 8-bit colour if you wish. However, there are great advantages to be had by choosing other available screen modes. For the StrongARM-enabled, 640 by 480 or 800 by 600 in 8-bit colour are particularly recommended; they provide a level of detail that's unparalleled in any version of *Doom* I've seen, while maintaining a reasonable refresh rate.

The high-resolution graphics transform the gameplay; objects snap into focus much further away and positively enhance the feelings of depth and distance. The 24-bit colour modes add another dimension of realism, too – although they're only available at



lower resolutions due to VRAM memory restraints (I've been running the game with just 1 megabyte), the quality of the light-sourcing with which the scene can be rendered is stunning.

If you choose one of the standard Acorn screen modes and you've got enough VRAM, *AcornDoom* will be capable of running in full-screen; pressing F12 will transport you back to the desktop in a flash. However, *AcornDoom* will run at any resolution you choose, displaying the action on the desktop in a window if it can't find an appropriate full screen mode. Currently, no warning is given; it would be helpful if the user could tell whether there were sufficient resources for full screen play in a particular mode before starting the game.

Squeaks and groans

I had some initial problems with *AcornDoom's* sound due to the fact that my Risc PC was one of the early models only capable of producing 8-bit quality. Although *Doom* was making noises in approximately the right places, it was as though some sneaky prankster had crept into the WAD files and had been replacing all the monsters with cunningly-disguised mice. Shrill squeaks echoed around the empty halls and stairwells; not exactly the sort of dark, brooding atmosphere you're looking for.

I took the easy way out and treated myself to a 16-bit sound card – an instant transformation from rather pathetic squeaks to meaty explosions and growls – but I understand that R-Comp Interactive are looking into this problem and will be addressing it in the second *AcornDoom* release, available by the time you read this.

The music in both the original and Acorn versions of *Doom* is MIDI-based, so if you haven't got some form of MIDI synthesiser (whether it's implemented in software or hardware) you won't get to hear it. For those of us suffering in silence, the best solution is to pop an appropriate CD in the drive and play along to that – I've



been told that the music included on the *Quake* PC CD-ROM is particularly suitable.

The verdict

The release of *AcornDoom* is a milestone for the Acorn games market, showcasing the power of the high-end Acorn machines as well as demonstrating that bridges can be built between the lands of the PC empire and our own isolated shores.

Eddie Edwards and the team at R-Comp Interactive deserve high praise for displaying tremendous stamina and resolution in bringing this piece of gaming history to the Acorn. Not only did they battle courageously through the legal jungles surrounding the title, but they released an engine that shows considerable improvements over the base system.

At £35 including VAT and delivery, and comprising over 3,000 levels, *AcornDoom* is a veritable bargain and promises many hours of exciting gameplay. The pack oozes professionalism and attention to detail, and if you're a fan of the genre there's no choice in the matter – buy a copy now.

Finally, it just remains for me to point out that *Doom* wasn't designed to suit every age group and, because of the violent nature of the gameplay, has been given a 15 certificate by the BBFC.

Product details

Product:	AcornDoom
Price:	£35 inc VAT & delivery
Supplier:	R-Comp Interactive
Address:	22 Robert Moffat, High Legh, Knutsford, Cheshire, WA16 6PS
Tel:	01925 755043
Fax:	01925 757377
E-mail:	rci@rcomp.co.uk
WWW:	http://www.rcomp.co.uk/

Doom Special
Three thousand worlds and counting

Graham Nelson on *Doom* level design

Doom consists of an engine (about 200K of program) plus wads of data – images, sounds and layouts. *Doom II* compiles about 2000 files into a single WAD file, 14M long, and the art of programming *Doom* is to provide a 'patch WAD' over-riding only some of those 2000 files.

Some people only alter the architecture, providing new levels but using the same stock of pictures and effects, which makes much shorter WADs – say, 50 to 200K. More ambitious themed redesigns, with new wall-designs, sounds, music and monster appearances, run back up into the megabytes, and that means long Internet downloads and plenty of hard disc space. Prepare to have your definition of 'a large file' revised upwards.

A WAD contains pure data, with no scripting language or pseudo-code, and this does constrain what designers can do. As a result one tool for experts, *DeHackEd*, has to resort to modifying the PC version of the engine program to achieve cunning effects – *AcornDoom* contains different code, of course, but *DeHackEd* is nevertheless being ported to it, and RCI hope to make it available from their website (*http://www.rcomp.co.uk/*) shortly.

Other WADs don't work simply because they aren't quite correctly compiled. All the same, some amazing redesigns still work perfectly such as the *StarDoom* conversion, featuring Death Star corridors and walkways, and Imperial storm-troopers in white armour.

The way these virtual worlds are stored internally is an interesting solution to a difficult problem. The level designer begins by putting down line segments, called 'linedefs', in an overhead view. These represent walls and have two sides, each with its own 'texture' or appearance. (*Doom II* comes with some 450 textures built in, from slimy walls to computer consoles.) For display purposes, walls are divided into the middle part, plus a lower and upper strip, like a skirting-board and a picture-rail, which have their own designs. The art of good texturing lies in aligning the images nicely, so that motifs seem to wrap around corners or appear in unexpected places.



Linedefs are grouped into 'sectors', areas where the ceiling and floor height, the lighting and so on are the same. Sectors can be any shape or size – a spiral staircase needs one wedge-shaped sector for every single step, for instance. Once the sectors make up a play area, items, switches and monsters can go in – their line of sight and quality of hearing being especially important.



The Death Star

Editing all this sounds like a straightforward computing problem, but a level also has to contain some complex pre-calculated tables. The *Doom* engine has little time to check which walls obstruct the view of which others during play, so it relies on the 'node tree' to tell it which walls to compare with which. If the tree is badly set up, or 'unbalanced', speed and even accuracy can suffer, and level editors vary wildly in the quality of the node trees they produce.

This is only one reason why experts produce much better-looking levels than beginners. It helps to know the folklore about what performance can be squeezed out of the *Doom* engine, and what the most notorious pitfalls are. ('The Medusa Effect gets its name because it looks like snakes and makes your computer turn to stone' – *The Unofficial WAD Designers' Handbook*.)

All the same, about 3000 new levels exist at the central 'Walnut Creek' archive (*ftp.cdrom.com*), together with themed redesigns ranging from Bugs Bunny to political satire. (In protest against the French nuclear tests in the Pacific, there's a WAD giving the fireball-throwing demon the face of President Chirac.) One popular idea is to implement a real, existing building, laying linedefs down from draughtsman's plans and scanning in textures from photographs. Trinity College, Cambridge, isn't a game at all, but an exercise in virtual reality, an architect's model that you can walk around in.

Every golf course is different, and every golf course is the same. It can be exhausting to choose *Doom* levels by downloading at random, so reviews are very useful. Mr Colin Phipps is a fine level critic, but has so far only reached the end of *A in the alphabetical* catalogue. But plenty of skimpier lists of favourites exist. The *Master Levels* set, included with *AcornDoom*, contains 20 which come up again and again - so you won't need Internet access to sample the best in home-brew architecture.



Special

"You've got to go direct..."

In the first of a two part interview, **Graham Nelson** talks to Andrew Rawnsley about R-Comp Interactive's games debut

How was R-Comp Interactive formed?
The company was officially formed in November 1996, in time for Acorn World. R-Comp have been around for about 18 months, but were sticking to their Web authoring software business, so with the launch of *PCSound Pro* it seemed logical to form a separate company.

PCSound Pro sold out on the first day. We'd expected it to be of interest only to a minority of serious users, but we were wrong – Acorn users were desperate to make PC gaming more enjoyable, now that RISC OS games were becoming thin on the ground.

Both companies offer serious, professional products. I personally have always been a keen gamer, but companies producing games on Acorn machines tend to be looked down on. This isn't the case in the PC world, where the games market has matured into a true industry – the endless stream of Acorn 'fluffy bunny goes to bunny-land' games may have something to do with it. RCI will be sticking to more serious, mature games. In *Doom*, you can cut the atmosphere with a knife at times.



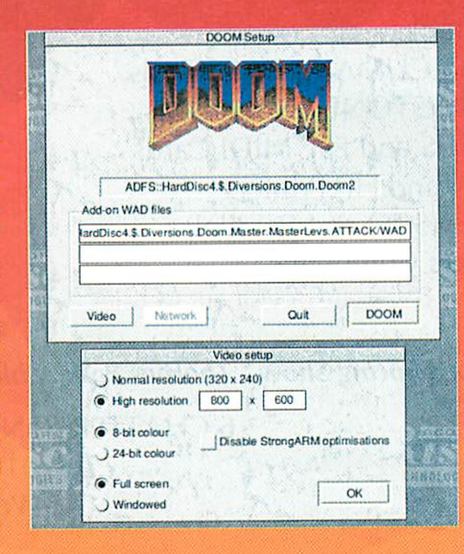
So why 'Doom'? It may be one of the world's great games but it's a major undertaking, both technically and legally.
Well, that's certainly true. We knew that Eddie Edwards had started work on *Doom* after *Wolfenstein*, but at that time licence fees had been restrictive, machines were not really up to it, and id software (the producers) were in a state of flux.

We approached Eddie and got him interested again. Sure, copies of the unfinished game had appeared on the Net, but most users were not on the Net. And people trust commercial software, whereas many ignore public domain and shareware. We knew we could do really top-notch versions of *Doom*, and retail it with the proper packaging and levels in one box. Anyway, what better game to enter the market with than the greatest of all time?

As for the legal issues, we figured that since *Quake 2* had just hit the shelves, we had a fair to middling chance at *Doom*. It was going to be hard work – I spent about a month working UK and American hours, 9 am to 10 pm – but once we'd got *Doom*, it would never be as tough again. Anyway, the secret is to forget e-mail. Nobody replies to e-mail. You've got to go direct. And have the guts to put your neck on the line for the platform, and stomach the phone bills...

How does dealing with PC companies work? Might you consider doing so again?
You've got to eat your pride. As far as they are concerned, the Acorn market is nothing. You are nothing. It's all about working a deal which is worth them writing up the paperwork for. US companies are run by attorneys. I don't know *what* managing directors and CEOs do over there...

We're currently in negotiations for several more titles as we speak. The big problem is lack of necessary technology under RISC OS. Many PC games share common resources such as Smacker Video or HMI audio routines, and these can be extremely expensive, and the necessary financial support hasn't been particularly forthcoming from Acorn.



When the Doom source code, about 1.4Mb of C, was made public domain last Christmas, the author John Carmack wrote that "it should be straightforward" to port. Was it and what was hardest part?
Eddie is the hero here. Actually making the code compile is fairly simple. Our very first 640x480 version ran at 6-7 frames per second on my StrongARM machine, and we were amazed at how impressive it was. But the final version runs at around 22-25 f.p.s., and *that* was the tough bit.

The more amazing feat is that Eddie got it all done in about three weeks. Sure, he'd done a lot before, but the game went from a crude concept to a full application with sound, music, high resolutions, desktop front end and window play in those three weeks. And Eddie deserves all the credit.

Did you need to rewrite for speed? Or have you made other changes? It all seems very faithful.
Eddie's trick was to see what the Acorn C compiler made of it, profile it with his own tools, and then do the compiler's job for it. The basic source is faithful, but graphics routines have been hand-coded for speed.

In addition, Eddie put in a whole lot of cool stuff that was never in the original. Little things mostly such as the 24bpp lighting model, and the WAD auto-detection – you can double-click on any WAD and *Doom* will do the correct thing.

Next month

In the second part of this interview, Andrew Rawnsley gives his views on whether the Acorn games maket can be re-built PLUS we talk to Eddie Edwards about his role in *AcornDoom*

Spreading the news

David Matthewman

looks at Pluto and Messenger – competing news and e-mail readers

The public perception of the Net may focus on the Web and (to a lesser extent) on-line chat, but most people who use it recognise the value of Usenet news as a source of information and e-mail as a way of talking to others. They may not have the glamour or the immediacy, but e-mail and news do have the advantage of simplicity.

All the professional Internet suites incorporate news and e-mail readers. Until recently the Freeware scene belonged to *TTFN*, which was stable, usable, but was no longer being developed. Its place has been taken by the more sophisticated *Messenger* by Mark Sawle, while Jonathan Duddington, apparently frustrated by the newsreader built into the *Voyager* suite, has released a commercial package *Pluto*.

Pluto is a standalone news and e-mail reader and storage system. *Messenger*, on the other hand, relies on *Newsbase* to handle all the storage of articles and e-mail – it provides an interface to *Newsbase* to allow the articles to be read. In this review, then, I am really comparing *Pluto* with a *Newsbase/Messenger* combination.

Messenger and Pluto article lists. Note the threading in Messenger's window

Basic features

Both *Messenger* and *Pluto* share most of the same basic feature set, which covers most of what you'd want to do in everyday use. The exact way in which they do things may differ slightly, which can cause people familiar with one set of working a few problems, but shouldn't really be taken to criticise either program.

Key features they have in common include:

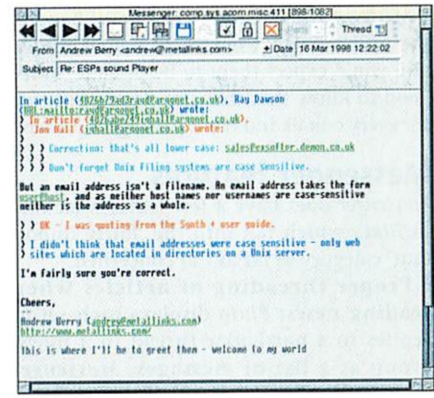
• Both are able to accept news and e-mail downloaded by *Acornet*, *Voyager*, *Termite*, or the *ANT Internet Suite*. Both can also post to these transports.

• Both will present you with a list of articles/e-mails, with an icon that changes depending upon whether the e-mail has been read or not. Both allow you to hide already-read items, to lock and unlock items, and to delete e-mails.

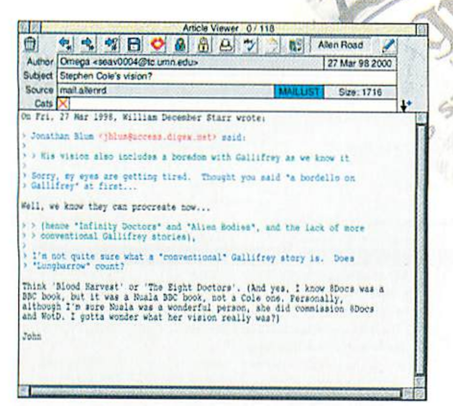
• Both allow filters to be set up so that e-mail to different people goes into different folders – this also applies to mailing lists. You can also easily move articles between folders.

• Both allow you to reply to/follow up to e-mail and news, and to create new articles and e-mails. The icon in the e-mail and article list will change to reflect the fact that you've replied.

• Both handle attachments to e-mail and news, although only *Pluto* can send ➤



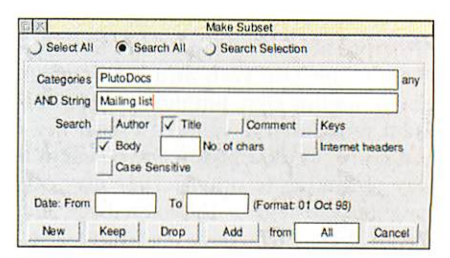
Messenger displaying a news article



Pluto displaying an item from a mailing list



Spreading the news



Creating a search filter in Pluto

attachments to news easily but this isn't something that you often want to do. While this is never a foolproof operation, both programs usually seem to get the MIME type/RISC OS file type mapping correct.

• Both interface to PGP for signing and encrypting messages.

• Both warn about netiquette errors when posting news and sending e-mail. *Pluto's* warnings are more comprehensive, but *Messenger's* cover all common errors.

• Both support header-only fetches for newsgroups with transports that allow it.

Many of these features are pretty basic to the operation of a news and e-mail reader, and you'd expect them to be present, so it's good to know that they are. That's not true for every e-mail and news package out there.

Messenger features

Messenger does have a few features lacking in *Pluto* which fall into the 'fairly important' category as far as I'm concerned.

• **Proper threading of articles when reading news:** *Pluto* displays each set of replies to a particular thread in a newsgroup as a list of messages. *Messenger* actually builds up a 'tree' of messages, indenting each reply. This is incredibly useful with a long thread, because it allows you to follow the complete set of answers to one reply before moving on to the next reply in the same thread.

• **Reference and replies lists:** *Messenger* lets you access, via a menu, the replies to a message in a thread, and previous messages in the thread that this message refers to. Again, this is very useful for navigating your way around complex messages.

• **Better documentation:** Both *Newsbase* and *Messenger* come with *StrongHelp* manuals, while the *Pluto* documentation consists of a set of text files accessed from within *Pluto* as if they were e-mail. While the Pluto documentation is good, *Messenger's* and *Newsbase's* is considerably better, and is also linked to from almost every dialogue box in the program.

• **Better multi-user support:** *Messenger* has the concept of different users logging in, having access to different e-mail boxes and subscribing to different news groups. *Pluto* doesn't really – all the mail boxes and the newsgroups are available to everyone, although it will route different people's mail to different folders easily enough. If several different people share your news/e-mail software, *Messenger* makes things a lot easier than *Pluto* does.

• **Status line:** Not everyone likes these – a line of text below the tool bar which changes depending on the icon that the pointer's over – although personally I find them very useful. Anyway, *Messenger* has one and *Pluto* doesn't, so that will be a point in favour of one program or the other, depending on whether you like status bars or not.

• **Cost:** It's an obvious point, but *Messenger* and *Newsbase* are free.

This isn't all that the *Messenger/Newsbase* combination has over Pluto (more on that later), but it's probably all that most people will notice.

Pluto features

Pluto has the following features over *Messenger*:

• **Internal e-mail editor:** *Pluto* has its own editor for editing and replying to news/e-mail. *Messenger* has to rely on an external editor for this, such as *StrongEd* or *Zap*. *Pluto* can use an external editor as an option if you prefer, although the built-in one is very good – and I say that as a confirmed sceptic of built-in text editors. The Ctrl-F re-formatting of a paragraph (including a quoted one) is an absolute godsend.

• **Spell-checker:** This is coming for *Messenger* (and you can use third-party spell-checkers), but the more expensive version of *Pluto* comes with a pretty good spell-checker built-in. It will check an e-mail before you send it and does check-as-you-type. It has an abbreviation dictionary which can also be used to auto-correct common typos.

• **Speed:** *Pluto* is faster in nearly all respects, because of the way it stores news (discussed later). In particular, searching and creating a list of news items that correspond to a particular filter is very fast in *Pluto*. Processing 600 e-mail messages which had just been downloaded took 25 seconds in *Pluto* and 1 minute and 20 seconds in *Messenger* (on my StrongARM Risc PC).

• **Speech:** The more expensive version of *Pluto* comes with Jonathan's speech module, allowing your computer to read e-mails out to you, and also to speak as you type. While this would never be mistaken for natural speech, it's easily good enough for you to catch mistakes in your e-mails that you might have skipped when proof-reading, and to read e-mails to you while you do something else. Different quoting levels can use different voices. *Messenger* will also speak e-mail if you have Jonathan's *Speak* program installed, of course.

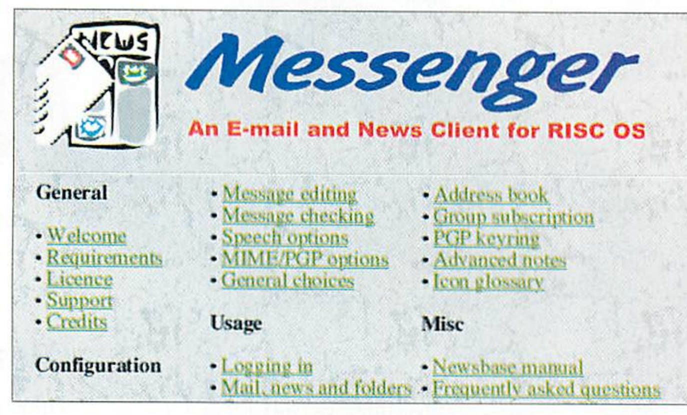
There are other points in favour of *Pluto*, discussed later, that probably won't affect the regular user.

Storage and speed

Newsbase stores each e-mail and news article in a separate text file. *Pluto*, on the other hand, stores them in a series of much larger files, compressed to save space. This means that the same articles take up less space on your hard drive with *Pluto* – around half as much space, though your mileage may vary.

This also brings speed advantages for *Pluto*, as deleting articles and moving them around is a lot quicker than in *Messenger*. The main speed advantage comes from the fact that *Pluto* caches a lot more information in memory than *Newsbase* does, making searching through and sorting articles a lot faster in *Pluto*.

For example, searching a set of articles for the word 'Acorn' in the header was to all intents and purposes instantaneous in *Pluto*, but took about 10 seconds in *Newsbase/Messenger*. Searching for 'Pluto' in the body of the message took 10 seconds in *Pluto* and 40 in



Messenger's StrongHelp on-line help

Messenger (but *Messenger*'s search multi-tasked: *Pluto*'s didn't). If searching and creating subsets from news is something you do regularly, you'll appreciate this. In fact, I'd go so far as to say that this just wasn't something I usually did before I got *Pluto*, but it is now.

There is a downside to this – *Pluto* uses more memory. Typically *Pluto* takes about 1.5Mb on my machine (I read quite a few newsgroups), and I have seen it grab a Wimp slot of over 5Mb before. Running it in anger on a 4Mb machine might therefore be a problem if you get a lot of messages, and you'd almost certainly have to quit your Internet software before running it. On a Risc PC with 8Mb or more, you shouldn't have any problems.

Newsbase and *Messenger* typically (on my system at least) run in about 1Mb between them, and will run on a 4Mb machine alongside the rest of the Acornet applications without too much trouble.

Pluto text database

One of the interesting features of *Pluto* is that it will act as a database for text files. Drag a text file to the *Pluto* icon, and it will display it as an e-mail, allowing you to save it in whatever folder you wish, and change author, title and category information. The 'category' field isn't one that gets used a lot when dealing with e-mail and news, but basically it provides a field into which you can enter categories that can later be searched and sorted on.

I confess that this simply isn't something that I often find myself needing to do, but having played around with it I can see that it could be useful; and *Pluto*'s certainly fast enough to make it a reasonable way of storing text files and retrieving the information later. Obviously you can save attachments to any documents that you store this way, so it can act as a database for more than just text.

We're not talking *Impact Pro* or *DataPower* here. If you want a database get one, not *Pluto*. But *Pluto*'s limited abilities as a text database are worth a mention, and a positive one at that.

Advanced features

Contrary to what you might expect, it's *Newsbase/Messenger* that has the more 'advanced' features of the two setups. That said, they're features that most users will never need or want to use, so most people won't miss them in *Pluto*. But techies will appreciate the ability of *Newsbase* to act as a POP, NNTP and SMTP server, and to administer it remotely via Telnet. Or possibly they'll want to write new transports for it, or applications that interface to it (there's already a mailing list server that runs with it).

All these applications are above and beyond what most people (including me) need. But if that's an area that you want to get into, *Newsbase* is the route to go down, not *Pluto*.

Reading news and e-mail

Neither *Pluto, Newsbase* nor *Messenger* actually connects to the Internet to download e-mail or news. They just read already-downloaded news and e-mail. In order to download this, you need another program called a *fetcher*. E-mail and news fetchers are built in to the commercial Internet suites, to *KA9Q* and to *Acornet*. With *Acornet* you have a choice of *FreeNews* or *NewsHound* for news and of *POP* or *FreeSMTP* for e-mail, although that may well depend upon your ISP.

The fetchers store your e-mail and news in a file, which is then read by *Newsbase* or *Pluto* to extract the e-mail and news. Different fetchers will store the information in different ways (although there are a few basic standards), so *Pluto* and *Newsbase* need to know how to read the information from the particular fetchers that you are using. They do this by having a *transport* for the software in question installed; transports are included for all common Acorn fetchers.

To re-iterate, *Pluto* and *Newsbase/Messenger* only get involved *after* the e-mail and news has been downloaded, and *before* any replies are uploaded. The speed of the software therefore doesn't affect the amount of time you're on-line, or your phone bills. Nor are the programs particularly sensitive to which ISP you use.

Ease of use

Neither *Newsbase/Messenger* nor *Pluto* are exactly hard to use. They both require some configuration to get going, and more to work efficiently, and there's no doubt that some people will trip up when configuring them. Both come with 'getting started' documentation to help with this, and most people should be able to follow this easily.

Anyone who's previously used TTFN will probably find *Messenger* more familiar. *Pluto*'s user interface and way of doing things is a little different, and that puts some people off to start with. My advice – stick with it. *Pluto*'s user interface is very logical, and once you get used to it you shouldn't have any problems. In fact, of the two I'd say *Pluto* was better for the novice user, if only because it holds your hand a bit more and there's fewer scary options.

The bottom line

News and e-mail readers are highly personal things. If you're happy with your current one I wouldn't press you to change it. However, both *Pluto* and the *Messenger/Newsbase* combination are truly excellent pieces of software that outshine other packages not just on the Acorn but on other platforms as well. Kudos to all three authors.

I prefer the threaded news display of *Messenger*, although for e-mail (where this doesn't matter) there's nothing in it. *Pluto*'s speed (and the spelling and speech options) are strong points in its favour, and I certainly would urge everyone to buy the full version of *Pluto* rather than the version without speech and spell-checker. There are points on both sides on the user interface front – overall *Pluto* is probably friendlier, but that's highly subjective.

All three programs are being actively developed. I wrote this review in late March, with versions of the programs all dating from the last couple of weeks. There is a lively *Pluto* mailing list and a quieter *Messenger* and *Newsbase* one, which the authors participate in and throw ideas around.

If it's just going to come down to '*Messenger*'s free: *Pluto* isn't', then you're doing *Pluto* a disservice, because at £29 it's not going to break the bank. There's a demo version of *Pluto* on Jon's website (see product details), so you can try it out for free. By the same token, don't dismiss *Messenger* just because it's free. It may cost nothing, but it's worth a lot more than that in use.

Finally, thanks to Desktop Projects, who fixed my computer when the VIDC chip blew up and allowed me to deliver this review (just) in time. AU

Product details

Product:	Pluto
Version reviewed:	1.07g
Price:	£29 (full) or £24 (no speech and spellcheck)
Author:	Jonathan Duddington
Address:	6a Old Mill Avenue, Coventry CV4 7DY
Tel:	01203-415535
E-mail:	jsd@argonet.co.uk
WWW:	http://www.argonet.co.uk/users/jsd/
Product:	Messenger
Version reviewed:	1.34c
Price:	Freeware
Author:	Mark Sawle
E-mail:	mlsawle@locutus.demon.co.uk
WWW:	http://www.locutus.demon.co.uk/messenger/
Product:	Newsbase
Version reviewed:	0.60g
Price:	Freeware
Author:	Graham Allen
E-mail:	allan@mnhep1.hep.umn.edu
WWW:	http://www.hep.umn.edu/~allan/newsbase/

Newsbase and *Messenger* are available from all good Acorn ftp sites, but not always in the most recent versions.

Back to Back

Mike Tomkinson tries his hand at duplex printing

Two reviews for the price of one – you lucky people. The reason is simple enough – *LJ Duplex Professional* from Mijas Software requires a printer capable of duplex printing, hence the Kyocera FS-1700 with a duplex unit attached.

So what is duplex printing? Essentially it is the ability to print on both sides of a piece of paper in one pass through a printer. No more printing it out once one side and re-inserting the paper into the printer. Anyone who has ever tried this with a laser printer knows that it often leads to constant frustration with the printer beeping and informing you of a paper jam.

Laser printers and their close but more perverse cousins photocopiers can be a great source of stress, especially if you want to print on both sides of a piece of paper. Both involve the use of heat to fuse toner to paper. Heat causes paper to wrinkle and, in extreme cases, to curl. Getting the paper back into and through a printer to allow double-sided printing is a nightmare.

The question is why would you ever want to do this? Paper is relatively cheap and there is no saving on toner. Duplex printers are more expensive than their simplex alternatives and more fiddly to set up. However, there are probably hundreds of people who publish newsheets, A5 manuals, parish magazines, fanzines and a whole host of other printed material where double-sided printing would be of great benefit. Having work printed professionally costs a lot of money, and often the costs outweigh the eventual returns, if there are any.

For this reason alone, desktop publishing is not an adequate description of the process, as most publishing has to involve a printer at some stage, if only because most publishing involves both sides of a piece of paper. With the correct software and printer, DTP becomes a reality – certainly for small to medium print runs.

The printer

Let's deal with the printer first and, before I forget, a big thank you to the kind people at Kyocera UK for a loan unit. My humble Canon BJC-240 was not up to this task. The loan unit arrived in three sizeable boxes and my office began to resemble cardboard city. The laser printer is a full size, substantial unit in itself. This is a high volume, high speed unit and would be suitable for network printing. It sits on top of the DU-20 duplex unit which looks like an oversized paper feed tray. On the back fits a paper handler and tray and paper feeds from an internal cassette.

The unit is not small and dwarfed my Canon. Let's face it you pay for printing at some point. Paper is not a great cost but the equation I always use is that the cheaper the printer to purchase, the more expensive and short-lived the consumables like ink cartridges and toner.

Generally, the exact opposite applies – more expensive printers, like lasers, will be more economical in the long run, as the consumables such as toner cartridges will give thousands of copies. The economy of scale should apply. There are exceptions, like dot-matrix printers, which are cheap to buy with cheap consumables, but the print quality is usually correspondingly lower.

Thus the Kyocera may appear expensive but it is much more economical than most alternatives. You need to look at the cost of ownership not the initial cost. My first test was to print out some training materials I'd DTP'ed to go straight to a commercial printer as ready-to-print copy. What a dream that was – six pages per minute of crisp, sharp, 600dpi perfection. I was having to print the same stuff out on my bubblejet at 80 per cent to get it to fit on the page, owing to the much reduced print margins on such printers.

At this point I was making plans for how I could keep this printer forever. Would Kyocera believe that the courier had lost it? No, I had to sign for it – damn!

One of the things that often stops Acorn users from purchasing such printers, apart from cost, is the lack of a specific printer driver. I initially had the same worry, but the HP Las-Jet 4 printer driver from the Printers Directory worked perfectly. I had absolutely no problems and I suspect that is the case for most lasers.

The only printers to avoid are the ones that use GDI printing, where the computer does most of the work. These are usually advertised as 'Windows Only' printers and are characterised by the relative cheapness to buy and high costs to run. Panasonic produce such a range.

Now it was time to try duplex printing. At this point I ➤



Duplex printing

Back to Back

➤ encountered some problems. The duplex unit box contained no instructions. This should not have proved too much of a problem as my vast experience of laser printers should have enabled me to work it out from first principles. And so it was, to a certain extent. Setting the printer to duplex mode was easy enough. The duplex unit is actually only a method of reversing a piece of paper and sending it back to the cassette so that the other side can be printed on.

What a nightmare. If we ever publish photos of reviewers you will see me as a good looking, bearded, bespectacled chap. Before I used the duplex unit I also had some hair. I came to hate the sound of the paper jam beep with a vengeance bordering on the maniacal.

When the instructions did arrive for the duplex unit and in conjunction with the excellent technical help people at Kyocera, I noticed that another small unit was missing. This was an ominously named PA-20 paper path adaptor. With this fitted the problems disappeared and the paper fed and printed on both sides with no more jams. This unit was listed as optional but the duplex unit was useless without it. The PA-20 made all the difference but I couldn't help but notice what a flimsy little unit it was compared to the substantial appearance of the laser printer.

The only other niggle was the small clips that hold the parallel cable into the printer. These are the usual metal spring affairs but one came loose and disappeared early on. This presented a slight problem when fitting the HS-20 paper handler. This allows a rear entry for the paper, or feeds paper to the top tray. Unfortunately it also sits on top of the parallel cable and kept knocking out the cable because one of the clips was missing. A small but annoying detail.

The only other small grouse for Acorn users is that the actual manual, as opposed to the installation instructions, comes on a CD. The pages are in PDF and not easily accessible to Acorn users. Even some PCs do not have CD-ROM drives.

The software

You may be wondering about the software to drive this duplex printing? This is from Mijas Software and I was using version 2.35. It is simply installed onto your hard disc. At this point you need to adjust your printer driver slightly to 'print to file' rather than to 'parallel'.

This file is then 'shown' to the Lj-Duplex software and printed from there. Actually it is stored in the !Scrap directory. The screenshot shows the Lj-Duplex control panel. Setting this up is easy, although the differences in terminology between what your printer calls its various paper feeds and exits and what the software calls them can cause some confusion.

To test the duplex printing I switched the printer to duplex mode using the front panel. Easy enough. I then set myself the task of printing an eight page A5 booklet. I actually used the manual for *!Barcodes* which I reviewed some months ago. Kell Gatherer of Kang Software had sent me a copy on disc and I remembered having to turn the paper over on my bubblejet for double-sided printing.

The process of printing to file is easy but seemed to take a long time. Never having printed to file before, I cannot say whether this is normal, but it seemed much longer to me. Perhaps my legendary patience was deserting me by then, as the deadline for this article loomed.

At that point you simply load *LjDuplex Professional* and configure the paper bins according to your printer, set the number of copies required, the format (in this case A5 booklet), and press Print. I was using *Impression* but the software can handle *Ovation*, presumably *Ovation Pro* and *Techwriter*.

It is also possible to add your own additional formats to existing supported DTP packages or even new DTP packages. It would be nice to see *TextEase* supported by default as this is a popular package.

Having pressed Print you can sit back and relax while the software and printer conspire to produce double-sided or duplex copy. Absolutely no problems. A few moments later I was presented with an eight page A5 booklet, printed on both sides. The beauty of duplex printing.

The Lj-Duplex control panel

Conclusion

I would be being economical with the truth if I said I found the above easy. Missing parts, the late arrival of the manual, the clips and memory made setting up the printer more difficult that it should have been. Having said that, the Kyocera technical team were superb and I was assured that the same level of service could be expected by any customer. I have no reason to doubt that and it certainly proved an excellent test of Kyocera – problems were resolved immediately, or next day with courier deliveries. I wish certain other companies would take a leaf out of Kyocera's book.

As for the software, it behaved impeccably and is only let down in a few small respects. The manual needs a list of duplex printers and their respective Acorn drivers. I know that the ever-changing world of printers might mean the inclusion of this information as a ReadMe file but it would be better than nothing. My life would have been made a lot easier if a test file to print had been included.

The problems with setting up for duplex printing are that you are dealing with *!Printers*, LjDuplex software and a relatively sophisticated laser printer. At times when things do not work it is difficult to know where to start to troubleshoot the problem.

Like most things, when the system is set up it works faultlessly and you certainly learn an awful lot about computers and yourself in getting it all to work perfectly. AU

Product details

Product:	LjDuplex Professional Software
Price:	£25 plus VAT
Supplier:	Mijas Software, Winchester Road, Micheldever, Winchester, Hants, SO21 3DG
Tel/Fax:	01962-774352
E-mail:	mijassw@argonet.co.uk
WWW:	http://argonet.co.uk/users/mijassw
Product:	Kyocera FS-1700 Printer
Price:	£799. T version with twin-paper bins £999, with FS-1700N network printer £1029. Duplex Unit costs £450
Availability:	Contact Kyocera customer services on 0118-931 1500 for local re-seller



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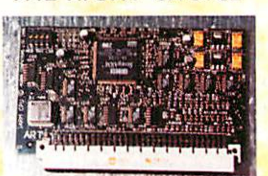
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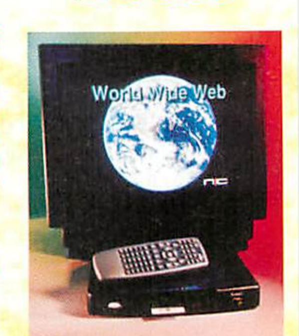
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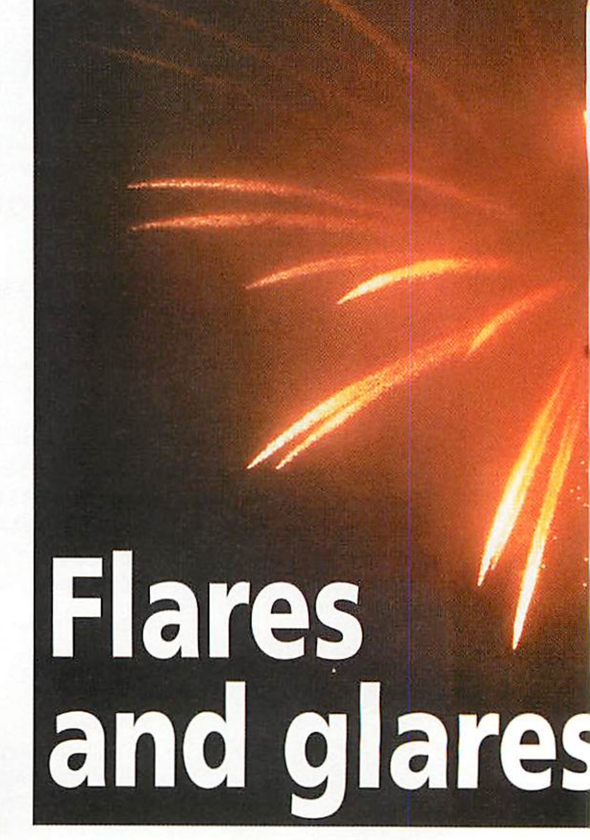
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In a slight change to the advertised schedule, this article shall deal with two special effects that are becoming common in modern computer games. Such effects rarely add to the gameplay but can form an interesting distraction from the task at hand and can sometimes provide an added dimension of realism to the graphics.

Recent trends in computer graphics have led to the development of high accuracy methods for measuring the physical properties of light interaction within an environment and to rendered images of such quality – these may be convincingly called photo-realistic. There is another school of thought, more common, where speed of image creation is paramount – that of creating images that are perceived to be realistic. Lighting glare is the most commonly used technique of this category and the ubiquitous lens flare is the most common use of the lighting glare concept.

Lighting glare

The motivation for lighting glare lies in the limited range of intensities possible through the standard monitor compared to the dynamic range apparent in the real world, and forms an attempt to overcome this limitation. The original idea is often attributed to Nakamae et al's 1990 paper on a new lighting model to enhance the appearance of light sources within the object scene, but has appeared in Impressionist art since the late 19th Century. It is something one sees in film, photography and real life.


Fig I: Real life light glare

When a light source surrounded by darkness is observed, three things are apparent:

• Firstly, a number of coloured concentric circles are visible around the light. These rings are known as the 'lenticular halo' and have the following properties:

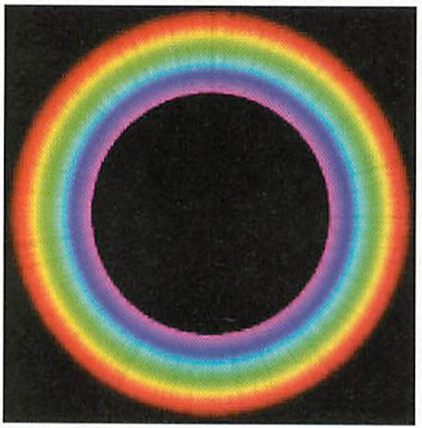
1. The observed size of the halo is independent of the distance to the light source. This creates the illusion that distant lights have larger halos than nearby sources.
2. The intensity of the halo decreases with distance; distant light sources have noticeably duller lenticular halos than those due to closer sources.
3. The intensity of the surrounding environment affects the visibility of the halo from invisible in daylight conditions to prominent in dark scenes.

• Secondly, one may observe a number of radial rays emanating from the light source, sometimes extending beyond the lenticular halo. Referred to as the ciliary corona, these rays are caused by minute density variations in the lens, and become more apparent with increased light intensity and distance from the observer.

• Thirdly, the contrast of the surrounding objects is decreased due to the intense light from the source scattering within the eye and interfering with the intensities of other observed objects.

These effects can be simulated to varying degrees of accuracy by some simple processes and techniques, starting with the lenticular halo – as the size of the halo is constant with just a varying intensity depending on distance, the automatic choice for rendering will be a 2D sprite.

The colours of the rings, as shown in Figure II, form the colours of the spectrum,


Fig II: Lenticular halo

from violet on the interior to red at the exterior. By rendering such an image offline we can pre-process the halo to whatever accuracy we require, without compromising the speed of plotting. An important aspect of the halo is the apparent slight scattering of segments of the rings. This variation is due to subtle irregularities in the array of cells in both the outer edge of the eye lens and the retina, leading to minute scattering of light in certain regions.

To render the lenticular halo image we can perform a pixel by pixel combination of elements of the background image and the halo sprite, considering the following properties:

• At minimum intensity no change in background image takes place.

• At maximum intensity the resultant image should resemble that of the coloured sections of the halo.

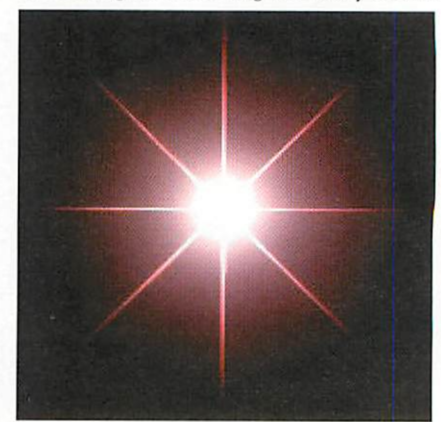
A suitable combination equation would be:

colour = background + intensity * halo * (halo - background)

where the variables colour, background and halo represent colour vectors with components in the range 0 (darkest) to 1 (brightest) and intensity is a constant dictating the strength of the overlayed image. This function obeys the above properties without the intensity magnification problem when two halos overlap, as exhibited by simple addition of colour components. In general, the value of intensity would never reach 1, values around 0.25 to 0.5 would be suitable for most dimly lit scenes.

The other element of the lighting glare to simulate is the ciliary corona. Deciding on the number of rays to render is pretty much up to our own judgement; observed numbers depend on the type of lens used, but between six to ten are common. The colour ranges also depend on the spectrum emitted by the light source, and unless high accuracy rendering is the goal, we are again free to choose the most aesthetic hues.

Figure III shows an artificially generated image with eight rays, and the range of colour one might expect from the typical car headlight. Generating the ciliary corona


Fig III: Ciliary corona



Paul Thomson looks at two types of special effects

is a process that can be accomplished by the ubiquitous gouraud shaded triangle plotter, but with two modifications.

Firstly, we do not wish to obscure the image under the triangle, so some form of transparency will be required in a similar way to the plotting mechanism described above. The other change is to use a non-linear intensity range, move specifically, to change the interpolation scheme to a function enhancing just the brighter elements. Both these alterations are quite simple to implement.

Transparency, as described above, is applicable at a pixel level, and will be calculated independently for each iteration of the horizontal fill routine. Non-linear interpolation mechanisms could be applied in two ways. Firstly, we could use multiple derivative terms: a rate of change of rates of change. The more complex the function we wish to model, the more numerous the derivative variables required.

Alternatively we could evaluate the function at each step using parameters that are linearly interpolated in the traditional way. The tremendous data processing speed of the StrongARM, particularly its multiply instruction, will allow fairly simple functions to be evaluated at little expense, and even complex ones could be pre-calculated and loaded from a lookup table.

Lens flare

Lens flare is a common technique in modern computer games, particularly those on the Nintendo 64, which is used to attempt to simulate an effect most film directors strive to avoid – that of filming directly into the sun. Sometimes used as a source of distraction, annoyance or pseudo artistic realism, computer simulated lens flare is a technique similar to plotting the lenticular halo, subtly overlaying a number of fixed size sprites at varying intensity levels onto the original image.

Real lens flares have the following property: A number of coloured artefacts appear on a direct line between the location of the light source and the centre of the image. The artefacts are generally similar in appearance to the lenticular halo, but can assume many alternative shapes, see Figure IV for some examples.

The interest in lens flare algorithms occurs when the sun is obscured by parts of the scene. In such circumstances the intensity of the lens flare artefacts must be reduced to reflect the restricted level of light reaching the lens.

The typical lens flare technique is as follows:

1. Define as 2D sprites, a range of suitable artefacts.
2. When rendering the scene, calculate the position the sun would appear on the screen (if at all).
3. Calculate the intensity at which to plot the lens flare artefacts based on the number of pixels obscuring the sun location.
4. Calculate a number of points along a line traced from the sun through the centre of the screen.
5. Plot the 2D artefact sprites at the calculated positions using some transparency based technique.

Figure V shows some examples using the terrain plotting code from last month. AU

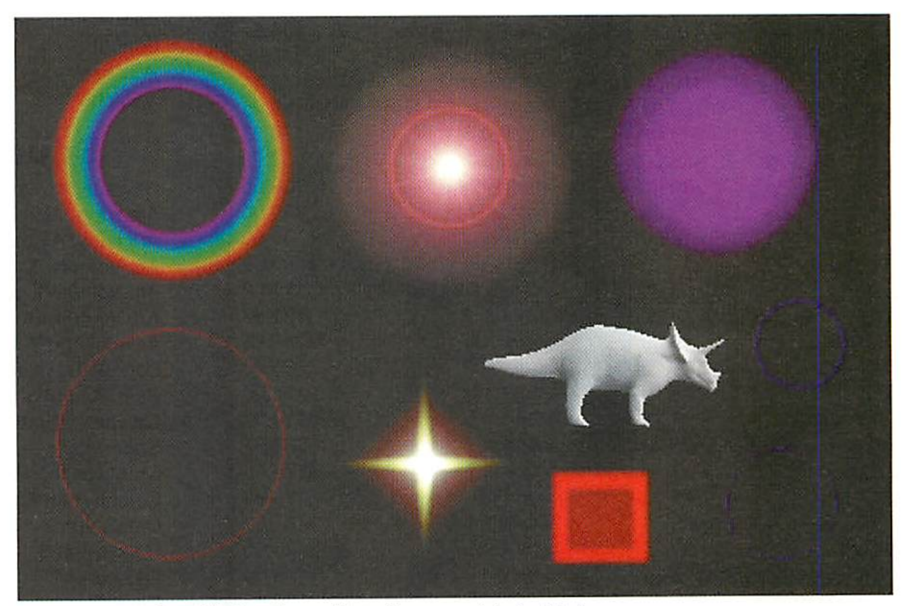


Fig IV: An array of possible lens flare artifacts (the square is just a joke)

Next month

The final article in the series will, eventually, discuss the combination of the last few months work into a small working, playable game.





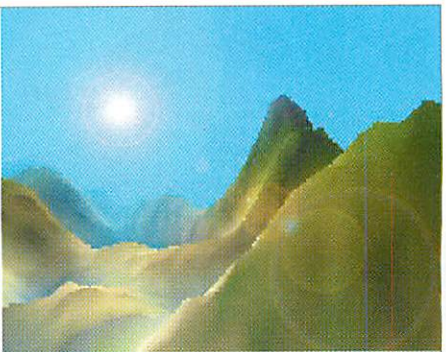


Fig V: Some lens flare examples using last months terrain plotter

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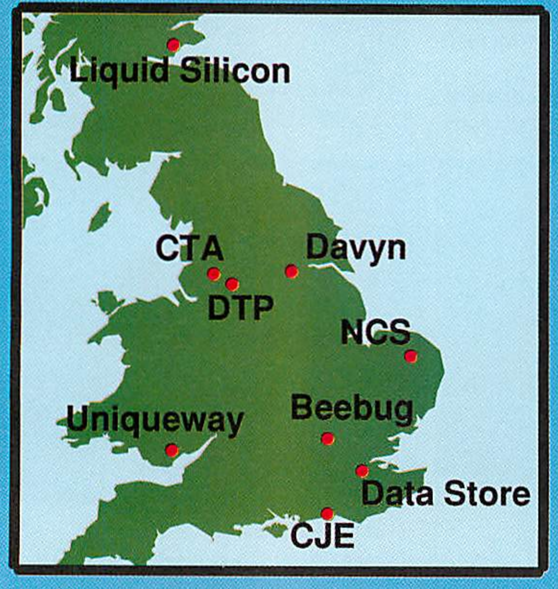
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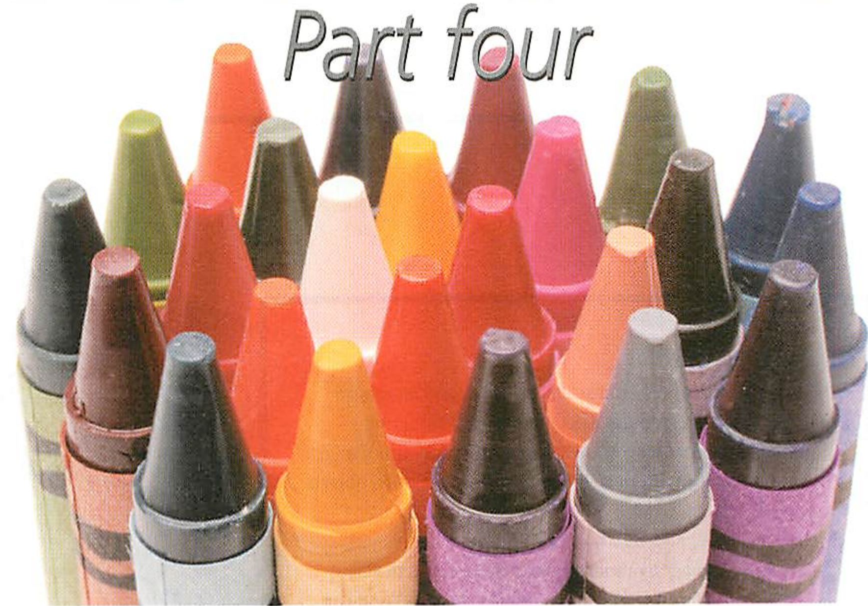
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The art of ArtWorks Part four



In the last of the series, **Nicholas van der Walle** brings together all disciplines in order to compose an image

Over the past three articles on the advanced use of *ArtWorks*, the emphasis has been on how to create alternative effects that were never documented along with the original package. The implementation of effects, if used appropriately, can transform a scene from basic to stunning. However, not many scenes contain just a single object, so an awareness of an object's surrounding has to be maintained. For example, the reflection from a chrome object has to be that of its environment rather than it always being placed in the typical desert.

This final article in the series will demonstrate certain principles of composing a picture. The example (shown overleaf) of an imaginary fork lift truck uses all the components that have been mentioned in this series from material finishes, blending through to transparencies. It is the way in which they are used in situation that has to be observed.

Sheet management

Whereas the artistic aspect of *ArtWorks* will always show through, attention also has to be paid to the way in which you operate this package. It can be relatively quirky, so it is important that several safeguards are taken in order for you to complete a large work of art.

Most importantly save your work regularly – an obvious statement maybe, but often forgotten. With a timely entrance, a new module has been released for *ArtWorks* by Martin Würthner (the prolific module generator) entitled *AutoSave*. I'm not really going to describe what it does as its title tends to give the game away, but at long last you are now able to set up *ArtWorks* files with a lifeguard in a similar manner to Computer Concepts' *Impression* products.

Secondly is the setting of the Undo Buffer in the Choices, *ArtWorks* menu. Ensure that you set the buffer to its maximum size and that it is saved with the file. By doing this you will be able to step back through your work – a facility that is essential at critical moments. Also, by saving your work by different consecutive names through the creation of the drawing, you will be ensuring that large works can be traced back to their origins. This also helps to bypass the fear that your work will be corrupted by one of *ArtWorks* many operational anomalies which appear at the most inconvenient moments.

Another aspect of *ArtWorks* which is often overlooked is that of layers. By using them correctly it is possible to create a complex scene without your machine taking irritatingly long to redraw at the advent of each operation. The way to ensure this is to create large components in a separate layer then, when completed, turn the layers visibility off. It is only at the final stages of the whole drawing that you need to combine all layers in order to sort their positioning. To do this select the multi-layer option then select all, copy to clipboard and paste on a new sheet.

You may also need to move objects between layers when drawing a picture (for example, from the foreground to background layer). To do this, select multi-layer 'on', ensure that the current layer is the one you wish the component to be moved to and clone the selection. Now delete the original item.

At the end of it all...

It has taken me many years to get to the stage of being able to draw using *ArtWorks* and I am still learning new tricks (a few of which were in the course of writing this series). *ArtWorks* is an ageing application, but it still has its uses in the real world.

There was no possible way that I could convey all hints 'n tips that I have in my possession – that alone would have taken the whole magazine, but I do hope that some use was found in all this. As usual it's just a matter of practice makes perfect.

➤

Product details

Product: Intersect
Supplier: Martin Wüerthner Software
Price: £10
Address: Mannheimer Str. 18, 67655 Kaiserslautern, Germany
Tel: +49-7034-928986
Fax: +49-7034-928915
E-mail: wuerthne@trick.informatik.uni-stuttgart.de

Product: Phantasm
Supplier: Astute Graphics
Price: £17.50 fully inclusive
Address: 40 Primrose Close, Ross-on-Wye, Herefordshire, HR9 7RN
Tel: 01989 567350
E-mail: nick@astutegrfx.demon.co.uk
WWW: http://www.astutegrfx.demon.co.uk

Further reading

As well as the previously stated tutorial present on the Astute Graphics website, I have managed to clarify some of the graphics reproduced in the first article in the series. Unfortunately as some of the graphics were lost in the process, certain comments didn't make sense.

The tutorials and clarification may be found at: http://www.astutegrfx.demon.co.uk/

All chromed-out

When dealing with chrome on a global basis, the object's surroundings have to be taken into account. As a chrome effect is based on a distinctive reflective appearance (typified by a sand/blue sky colour) it would be prudent to attempt to retain as much of the 'classic look' as possible.

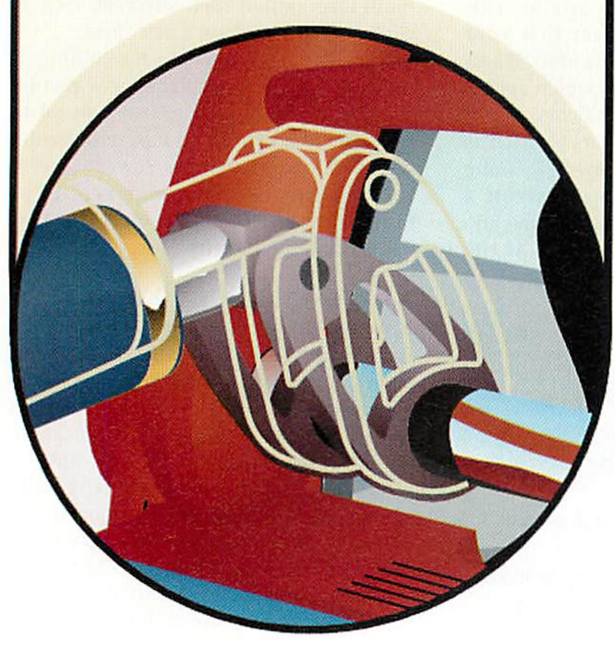
However, in the case of this picture I chose the vehicle's body parts to be dark sand in colour, a colour which was also used on chrome components by linearly filling the body-reflection segments from dark sand to black. The sky reflection areas of the chrome object kept the classic blue, as the actual sky was not shown elsewhere.

Materialistic

In order to increase the sense of realism in any image, an effective method is to use relevant material colouring techniques as discussed in the second article. By using a selection of such materials, a good contrast between objects can be obtained.

In this picture many surface textures have been represented simply by utilizing alternative styles of filling using linear and radial fills. For example, the brass end-cap of the piston (magnified below) is coloured in the manner of a shiny object, but using only an appropriate brass/black/white combination. This contrasts very nicely with a dull matt-like finish for the piston body, which was achieved through the use of blending between two radially filled objects.

Finally, don't be afraid to experiment with rendering techniques — I have come across many results by 'accident'. In the case of the 'shadow' motion outline, many presentation variations were tried (such as transparencies), but at the end, as with most cases, it was found that simple equates to clearest.



'FX'

ArtWorks has had a number of third-party additions to it, mainly due to its r
as transparencies (as discussed in the previous article) and clipping (as demor

Shown right is the detail of a set of *objects seemingly viewed* through son
Phantasm and the *Intersect* module. Shifting the colours of the background o
appear as they would through a single pane of glass. However, by repeating
impression of looking through two panes can be achieved (which is the case

Another use of this technique is shown before your very eyes – the grounc
written in. By doing this, any part of the drawing that 'gets in the way' can b
read the writing or gets left out. This is a feature used in many commercial m



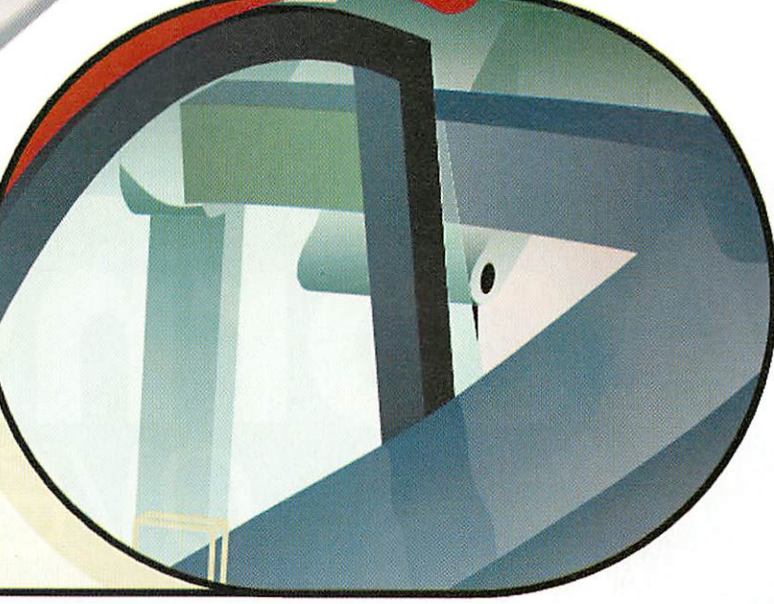
Non-bland-blending

If you've ever wondered why you bothered to buy a fast machine, even though *ArtWorks* remains unchanged for many years, it's because you've probably never blended between two linearly/radially filled objects.

It was demonstrated in the first article by the use of a cone-shading style that blending between such objects can produce very smooth and realistic results. Taking this principle into the 'real world', the hub of the wheel (magnified above) was created by blending between two radially filled ellipses (which were deformed using the envelope tool). By blending between edited clones of the same object, a better result is assured.

While drawing this picture, my StrongARM machine often took a tea-break while redrawing such blends. In order to overcome this tedious fact, I made good use of the layer facilities — if I knew that a certain component of the image was big, then I'd give it a non-visible layer.

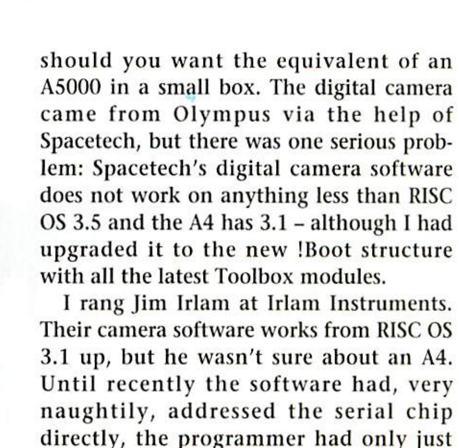
odular approach. This has brought about the ability to add such effects
strated by the magnified areas shown around this page).
e glass – a typical use of the facilities allowed by the use of both
bject to a light shade of turquoise (glass) a single time, lets the objects
this process on a segment already made to look transparent, the
with the front quarter-light panes).
beneath the vehicle also appears through the frame in which this text is
e appropriately faded out so that it neither interferes with the ability to
agazines and tends to work well.





Acorns over Egypt

Steve Turnbull gets on his bike and uses Acorn technology in the desert





The first camp taken with the Olympus C820 at normal resolution, 8-bit colour, unprocessed

Although I hadn't been on a bike in 20 years, the opportunity to do some good and get fit seemed like a reasonable combination. And that is how I came to be doing a long-distance charity bike ride through the Sinai Desert in Egypt.

This seems a far cry from Acorn computers, but I also realised I could take this opportunity to use and promote our favourite technology on the Internet while I was at it.

My original plans went something like this: Get an Acorn A4 from somewhere, a digital camera and a mobile phone connection in Egypt. Then, using a pocket modem, perform daily uploads of text and graphics to my website, handle e-mail and so on. Perhaps I could be the Chris Bonnington of the Nile Valley.

It wasn't to be. The original bike ride was from Luxor to the Aswan Dam and back, sleeping nights on a four-star Nile cruiser. Which meant I had power for the batteries and, if I couldn't get a standard mobile working there, I could probably use the supplied satellite phone.

Just before Christmas the ride was changed to Israel and we would be camping. That meant no satellite phone and a country that doesn't use the same standard mobile phone technology as others (which would limit the data rate to something far too slow).

The fact we were camping meant nowhere to plug the battery charger for the computer – not that I'd located one at this point anyway.

I was disappointed, but I persisted. OK, so I would not be able to upload on a daily basis but, with a solar charger (my original dynamo-on-the-bike idea shot down in flames by Mike Cook), I should still be able to run the A4 and keep the pictures from the digital camera and write my impressions as I went along.

Then Israel became a potentially dangerous place to be and we were back in Egypt. This time in the Sinai Desert, the triangular peninsula that hangs between Africa and Asia, Egypt and Israel.

The new itinerary showed us camping for two nights and in hotels for the others. Good news, particularly as it turned out that I had left so little time that a practical solar charger was out of the question – the only available solar panel was extremely heavy and there was no time for testing.

The A4 was borrowed from Norwich Computer Supplies – their demonstration model for the machines they have for sale, should you want the equivalent of an A5000 in a small box. The digital camera came from Olympus via the help of Spacetech, but there was one serious problem: Spacetech's digital camera software does not work on anything less than RISC OS 3.5 and the A4 has 3.1 – although I had upgraded it to the new !Boot structure with all the latest Toolbox modules.

I rang Jim Irlam at Irlam Instruments. Their camera software works from RISC OS 3.1 up, but he wasn't sure about an A4. Until recently the software had, very naughtily, addressed the serial chip directly, the programmer had only just made the changes to work through the operating system, as it should.

Part two of my master plan for photos was taking a very cheap (free) 35mm camera and getting the films converted to PhotoCD. That was certainly the least of my worries as I had done it before.

At departure minus two days all the hardware and software came together in one place – and it worked. Not that I ever doubted it, after all this was Acorn hardware and software we were dealing with.

The Sinai Desert

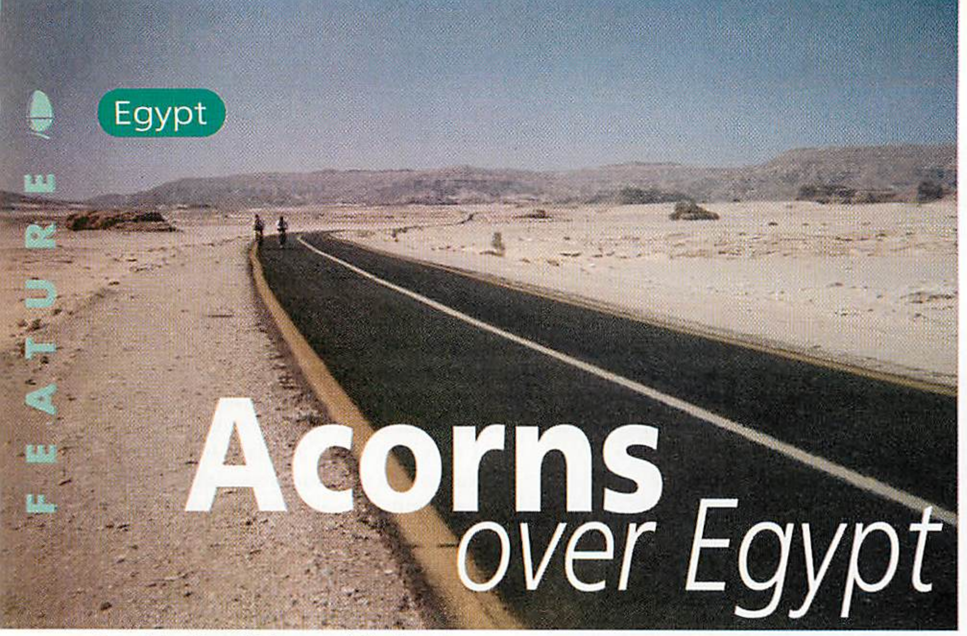
The first night I had the computer plugged into the power socket, it was a little low on power and I was glad to see that the airport promise that the X-ray machine wouldn't damage portables or wipe hard discs was true. I tried out the Olympus 820 and that worked too.

The next two nights were camping, first on a beach and then up a mountain. The first worry was the sand, getting wind-blown silica out of the keyboard was not my idea of fun, and I was also concerned that the batteries would not last. So I simply transferred the pictures from camera to hard disc, made a few cryptic notes on ➤

◄ Your intrepid editor snapped from a moving car using the cheap camera and converted to PhotoCD



An 8-bit colour digital image of a water break on the second day at high resolution, this image has been processed slightly



Acorns *over Egypt*

One of the PhotoCD images of the desert

➤ *!Zap* and left it at that.

The second camping night I was less concerned about preserving the battery as I still had 80 per cent charge, so spent some time huddled up with the machine, typing by torchlight after I'd uploaded the days pictures. By the end of the evening I was down to 60 per cent power but unconcerned.

The A4 has no trackball but a little software module which allows you to use the cursor keys to control the on-screen pointer. It was tedious and slow but it did work, and was easier than messing around with a mouse and a metre of cable.

From then on we were at hotels each night so the power wasn't a worry. However I did find a problem with the digital camera and power.

The back of the camera has a large power-hungry colour LCD monitor which you can use to view the pictures you have taken or see the view from the lens when the camera is on. It is switched on with a green button that sits proud of the back of the camera. Herein lies the problem.

On two separate days the button must have been pressed by accident as I carried it about in the backpack, resulting in flat batteries in the evening. Luckily I had bought a good supply with me but it seems a serious fault.

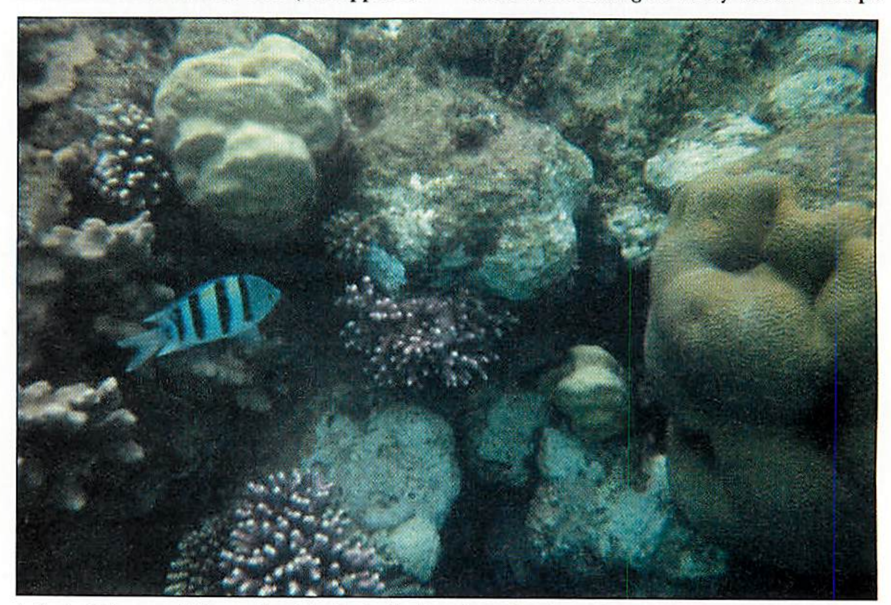
The problem is alleviated by carrying the camera around in a case (I swapped it with the case of the cheapy camera) but I could still see it happening. If it had not been for that I think the camera would have managed on one set of batteries all week.

To PhotoCD or not

The quality of the digital camera, though adequate by computer standards, cannot stand up to 35mm film – even on a free camera – unless you want to spend several thousands of pounds.

My riding partner, Mark, intended to dive to the coral reefs in the Gulf of Aqaba and to this end bought a disposable underwater camera. Inside this is a standard 35mm film, so we checked and yes, it is also permissible to put these on to PhotoCD.

Once we got back to the UK we went off to Boots and handed everything in for processing and putting on PhotoCD. We were a little concerned, but as it turned out there was nothing to worry about – except the cheapy camera didn't wind the film on properly so some of the shots were overlapped. Just shows you can't afford to skimp. To convert our three films and buy a PhotoCD Gold to put them on cost £50.



A PhotoCD image of the coral reef in the Gulf of Aqaba using the underwater camera



The "disposable" underwater camera worked very well, and the image was then put on to PhotoCD

A word of warning, if I had not known in advance I might have been tempted to take one of the excellent Advanced Photo System cameras – however these cannot be used to produce PhotoCD, they are converted to a new CD format called FastPix.

One mistake I did make, due to not getting the digital camera software until the last moment, was that all my digital pictures were downloaded from the camera as 8-bit colour instead of 24-bit. It was an unfortunate lapse and so the digital pictures are not as good as they should be.

If you are interested in a full description of the Bike Ride it can be found on my personal website at http://www.cix.co.uk/~turnbull/ AU



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Five's alive!

Mark Taylor takes a look at some of the latest software available for the Psion Series 5



One of the big strengths of the Psion Series 3 was the large and varied range of excellent third-party software. When the S5 was first released, third-party software seemed to be a little slow in appearing, but recently this has all changed and new software packages are appearing with ever increasing frequency. The software market is now well and truly alive!

In this article I'll be taking a look at some of the latest offerings from some of the bigger developers – Psion, Purple Software and Palmtop BV.

Getting there

Although *MS AutoRoute Express* was released for the S3, it was never likely to be converted on to the S5 due to the competition between Psion and MS WindowsCE. However, all is not lost as Palmtop have released *En Route* for the S5 so that even a navigationally challenged person such as myself should have no excuse for ever getting lost again!



Planning a route across London

The program is supplied on a CD containing maps for either Europe or the USA. Installation is easiest via a PC using the *PsiSetup* program, although it is possible to install it manually on an Apple or Acorn. During installation you select which maps you wish to install – memory is the key here, as the amount of space required for a country's data varies from 0.2-2.2Mb. A compact flash disc is a must if you wish to use this program a lot.

Once installed, the program appears on your Extras bar and is loaded in the normal way. After a brief intro screen you are presented with a map of the country whose data you have installed.

The scale and levels of detail for roads, cities and districts are all configurable using four slider-style bars on the toolbar. Also on the toolbar are buttons to configure the view, to alter the mode of operation (how you move around the map – either scroll or cursor) and to plan a route.

En Route offers three views – map, instruction table or a split view containing both. All are useful depending on how you are using the program.

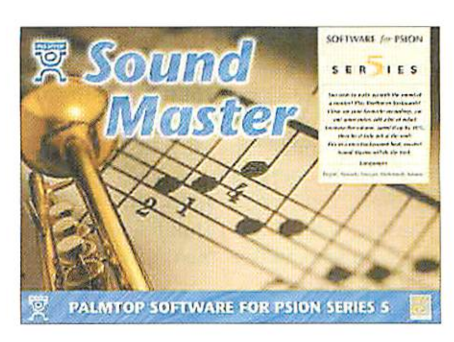
The maps for *En Route* are provided by AND Mapping, the Netherlands equivalent of Ordnance Survey and are all of high quality and detail. A clever feature is, instead of putting all the names of the smaller towns and road numbers on the map, you simply click on an area or road and the name appears. Overlays are also available showing features such as airports or campsites. Planning a route is simple, you click on the Plan icon, select the starting and finishing point and also any places you wish to visit on the route and you're away.

The program will give you either the quickest, shortest or your preferred route. The preferred route is determined by your preference of road choice, i.e. if you prefer to avoid motorways the system will give you a motorway free route. Once you are happy with the route it can, if required, be printed out using the S5 parallel link cable.

It is possible to configure *En Route* to avoid roads and areas of the country that you do not wish to travel on/through, for example, the M25! You can also configure the average speed for each type of road, the units of measurement (miles/kilometres), whether the map follows the route as you move down it, whether to have a small view showing where you are in the country and much more.

The program also supports the use of the global positioning system (GPS) allowing you to know where you are at any time – very helpful!

In use, *En Route* is quick and easy. I tested it on some familiar routes and found the results to be as I would have expected – which is good – especially as I've been travelling some of the routes for a long time.



Overall, this is an excellent application, well-written and presented and if you have any use for this type of program I would highly recommend it.

Sounds like this

The name of this program should be familiar to most readers, as versions of this software are available for the S3 and in fact the program was included as standard on the S3c. Now Palmtop have released a S5 version allowing users to manipulate sound samples that have either been imported onto or recorded on the S5.

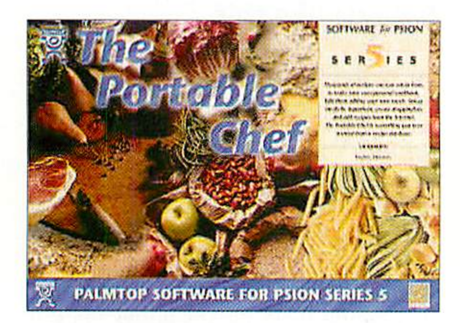
The program is supplied on a CD along with 1Mb of various samples. There is no instruction book provided, but the program is virtually self-explanatory, and if you do need any help, as with all Psion programs, there is a comprehensive on-line help feature.

Once a sample has been loaded into *Soundmaster* a wave-form of the sound ➤

appears with a cassette-style indicator with the controls below it.

The sample is manipulated using the effects window which offers features such as echo, vibrato, filter, fade in/out etc, as well as a number of special-effect styles, for example, Underwater and Metal. It is also possible to alter the volume and speed of the sample as well as mixing two or more samples together.

Altogether, another well-written and easy-to-use program. For me, it is a great toy to fiddle with as I don't really have any serious use for it. However, if you have any need to manipulate sound samples on the move, you can't go too far wrong with this.



Tastes good

If you're one of those people that always has a cupboard full of ingredients but can never decide what to prepare, then this program could be for you. *The Portable Chef* from Palmtop is best described as an interactive cookbook and shopping-list manager.

The program is supplied on a CD containing the application and approx 5Mb of recipes. If this is not enough, more can be downloaded from the Internet and installed, provided they are in Meal-Master format. Again, there is no instruction book provided but this isn't really a hindrance and comprehensive on-line help is available.

Once loaded and a set of recipes has been installed, it is possible to search for them in a variety of ways, including meal type, name and description. It is also possible to enter a set of ingredients and let the program select suitable recipes.

The program will also take the headache out of altering recipes to cater for a larger/smaller number of servings. Measurements can be shown in either imperial or metric units depending upon your preference.

The program also allows you to create and maintain shopping-lists, selecting ingredients from the recipes that you will need to buy before you can create your culinary masterpiece.

I have to admit I had a bad feeling about this program even before I installed it. It's not that it isn't well written and presented, it's just that following a recipe on a Series 5 seems a bit of an alien concept to me. I know it's possibly an easier way to find and store recipes and you could always then print them out, but I'd rather stick to a normal cookbook.

All in the presentation

The electronic office is made up of four components – the wordprocessor, database, spreadsheet and presentation maker. Psions have always had the first three elements on this list but the latter has been conspicuous only by its absence. This has all changed with the recent release of *Presentation Maker* from Psion.

The program, which is written by Purple Software, is supplied on a floppy disc, along with the new *EPOC Install* application, making installation a doddle. Also supplied is a new clip art library.

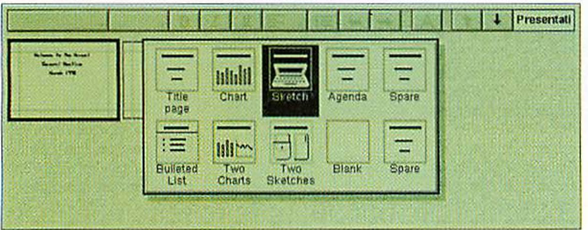
Once loaded you have a choice of using one of five prepared templates or you can create your own slide from scratch. Slides can contain graphs, clip art, sketches, spreadsheets and/or *Word* documents. Headers and footers can also be included on each slide.

Creating slides is easy, although I did have a few difficulties getting used to the way the program handled the moving and resizing of objects.

Organising and editing your presentation is simple using the variety of different views on offer. The order of the slides can easily be changed using the multislide view. A useful outline view allows the user to check how the presentation flows by showing the slides in a simple list form.

The presentations can be printed out directly onto paper or acetates directly using the S5, or it can be exported in *MS PowerPoint* format and loaded onto a PC. The program is also supplied with a *MS PowerPoint* importer for use with *PsiWin2*, making the program industry compatible.

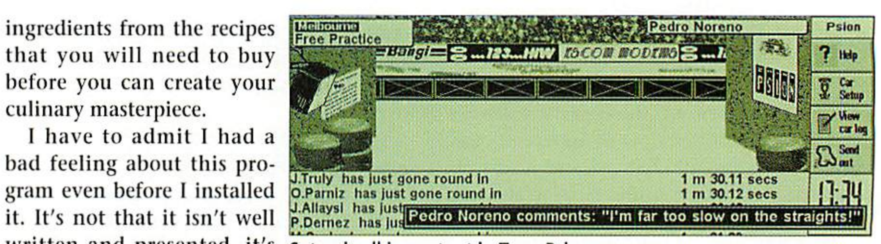
Overall, this is a superb program and in my opinion should be included as a standard application in the next release of EPOC32. If you have any need to create presentations, this is a must.



Presenting yourself to the world

Down the arcade

If you are after a little light relief while working on your latest masterpiece then *Games Arcade* from Psion could well be the answer. The compilation consists of five games – three are updated versions of S3 games and two are brand new.



Setup is all important in TeamPsion

S5Golf is an update of the well-known S3 game *Fairway*. The game has all the usual options – practice round, tournaments and two-player games. The graphics, as with all versions of this game, are excellent as are the sound-effects. It is a little difficult at first to get to grips with, but once you have mastered it, it is very addictive.

TeamPsion, is in my opinion, the best game in the compilation. The aim is to successfully manage your own Formula One team after receiving a sponsorship deal from Psion. The game involves setting up your car correctly, keeping sponsors happy, judging pit stop strategy and ultimately achieving the goal of winning a Grand Prix. The game is very addictive with good sound and graphics.

Tactile is a strategy game which involves flattening a series of tiles in as few moves as possible. Tiles react in different ways, some rise or fall, others rotate and there are 32 challenging levels to complete. A simple concept but never the less a good game.

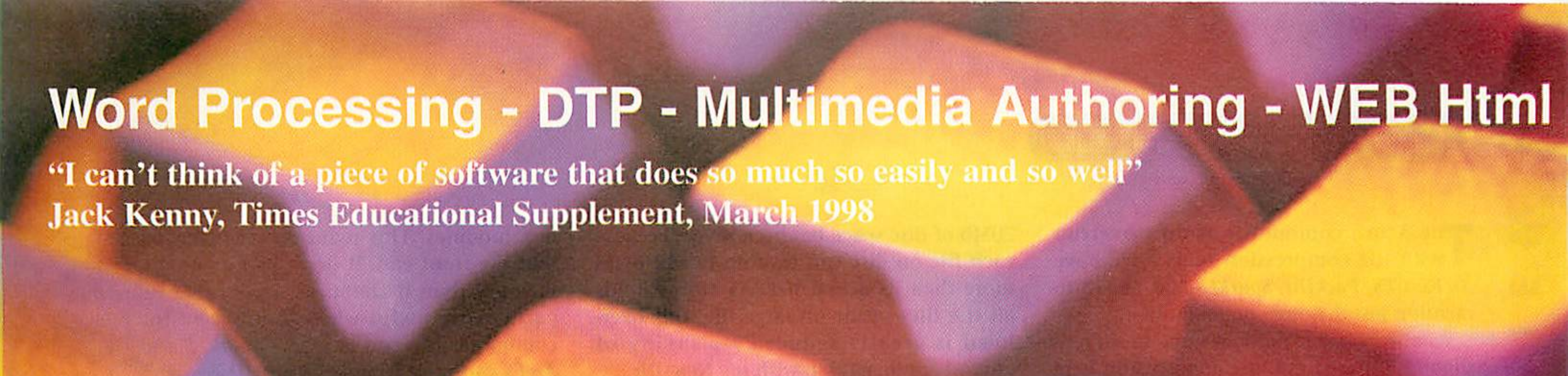
Finally, *Stigma* and *Bomz* are updated versions of S3 games. *Stigma* involves moving a marble around a series of levels collecting all the orbs while trying to avoid falling into outer space. The game's graphics are reasonable, but I'm afraid it isn't really my cup of tea. However, if you liked the original you'll like this.

Bomz, like *Stigma*, involves travelling around a set of tiles collecting all the orbs before the bomb explodes. Again the graphics are OK but it isn't really my type of game – as with *Stigma*, if you liked the original you'll like this.

Overall, this is a reasonable compilation and if your looking for some games for your S5 is worth buying. AU

Product Information

Product:	EnRoute
Price:	£49.95
Product:	The Portable Chef
Price:	£39.95
Product:	Soundmaster
Price:	£39.95
Publisher:	Palmtop BV
WWW:	http://www.palmtop.nl
Supplier:	Psion Stockists
Product:	Games Arcade
Price:	£29.95
Product:	Presentation Maker
Price:	£49.95
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"I can't think of a piece of software that does so much so easily and so well"
Jack Kenny, Times Educational Supplement, March 1998

The Acorn community is now overrun with file compression tools – we have *ArcFS, CFS, PackDir, SparkFS* and *TBAFS* to mention just the more popular ones.

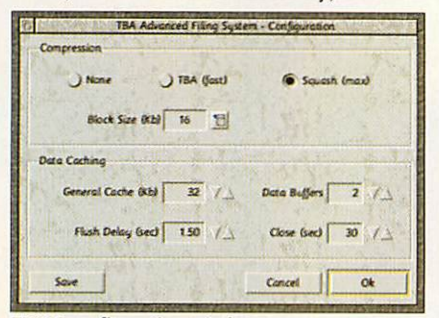
As always, each product aims to serve a slightly different purpose and my aim here is to provide a comparison between them.

TBAFS

TBAFS is very much the new kid on the block, but I feel it's let down by a poor user interface. The *RISC OS Style Guide* dictates that Select should open a new document. Carrying this over to an archiving program you'd expect Select to provide you with a way to create a new archive, however clicking Select over the *TBAFS* icon opens the configuration window.

The window itself feels clunky, for example the only way to change the cache size to 96K is to click on the up arrow and increment it in 1K steps.

TBAFS also has a nasty habit of setting the CSD (current selected directory) to itself



TBAFS configuration window

when loaded – this will probably only bother people who use the command line though.

To flex *TBAFS* a bit, I put the contents of my *!NewsDir* inside one of its archives. NewsDir is the place where *Newsbase* stores all the e-mail and news it has received, and typically consists of several thousand files with a total size of 10 to 20Mb.

In my *!NewsDir* there were 20,000 files, totalling 70Mb, which, after compression with *TBAFS* on the 'Max' setting, came to 50Mb. This is fairly impressive in itself, but you also have to realise that more than 20Mb of disc space has been saved, because each file on disc can take up to 512 bytes more than its actual size. As *TBAFS* holds all the files inside on large file, this overhead is greatly reduced – a saving of around another 10Mb with my NewsDir.

Unfortunately, shortly after doing this, my computer crashed while *Newsbase* was debatching and after a reboot I found I couldn't access around half the files, and some attempts caused *TBAFS* to crash the computer.

In some ways this was actually a good thing, as it gave me a chance to try out one of the utilities that accompany *TBAFS* – namely *TBAFSfix*, which is designed to scan a corrupted image and create a copy without the corrupted areas. Regrettably, trying to fix the corrupt archive turned out to be a bit of a failure, with two attempts locking the computer and only 500K of data retrieved.

Undeterred, I decided to have another go at compressing my *!NewsDir*, and had much better luck. This time I only archived part of it and used three different images – the results were quite promising. For example, one of the directories compressed down to 20Mb from 28Mb, with around another 8Mb of disc space saved on top of that.

Once archived, access to these files didn't become any slower, and in some cases was actually faster and I didn't suffer any more problems with corrupted archives.

Next I tried putting a PC partition inside a *TBAFS* archive. Using 'Fast' mode, the 256Mb was reduced to 200Mb – after this, Windows 95 ran at around 70 per cent of normal speed.

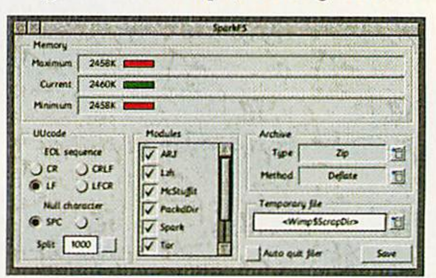
Recompressing it, but this time in 'Max' mode produced a 170Mb file, a saving of a 33 per cent. Impressively, running from this partition was only slightly slower than in Fast mode, at around 65 per cent of normal speed. This is definitely a great space saver, but anyone other than a light user would almost certainly find the speed decrease unacceptable.

One of *TBAFS*'s main plus points is its memory usage – the whole application takes 224K, or 416K if you include the toolbox modules. This reduces by 32K if you quit the front end. It never uses any more memory than it claims at startup. This is particularly useful when in use from the command line and is where *SparkFS* and *ArcFS* can have trouble because they aren't able to claim the memory they need to compress or uncompress very big files.

SparkFS

This is a jack of all trades, at least as far as reading archives goes. Of the tools we're considering here, *SparkFS* can read *ArcFS* and *PackDir* archives, and it's supplied with a free tool which can read *CFS* files. This only leaves *TBAFS* that it can't read.

One of *SparkFS*'s best features is its user interface, which I think is particularly well-designed – for example, clicking Select on



SparkFS Configuration window

the iconbar icon opens the 'Save as' dialogue for a new archive – the most common operation you're likely to perform.

The Choices window is concise and obvious to use, with the more exotic options alterable by editing text files inside the application directory.

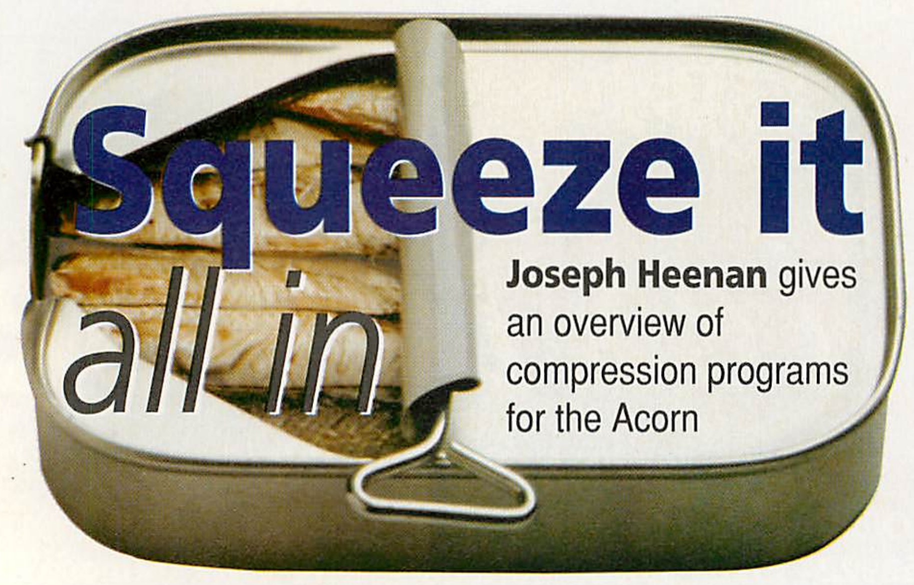
Its memory requirements are vaguely similar to *TBAFS*'s: 416K with the front end loaded, and 256K with just the file system loaded. However, *SparkFS* needs extra memory when compressing, and performs better when it has sufficient memory to cache files it's working on, otherwise it uses a temporary file on disc which slows it down. The amount needed depends on how big the files being compressed are, which can make it impossible to archive files larger than your available memory.

One downside is that the freely available decompression tool (*SparkPlug*) is not an image filing system, whereas the *TBAFS* and *ArcFS* variants are. The disadvantage of this is that you can't run files directly from the archives, they must first be copied to disc.

ArcFS

This was one of the first, if not *the* first, compression systems available that uses an image filing system (*SparkFS* and *TBAFS* are also image file systems, *PackDir* is not).

Clicking Select on the iconbar opens the Choices window rather than the new archive dialogue, but otherwise the front end is well-structured. My only possible gripe would be that the number of options available in the Preferences window is a little daunting at first. In use, *ArcFS* is roughly equivalent to *SparkFS* in sparkive mode, but slower at copying files into an



archive and faster at manipulating them inside one. One thing that I couldn't persuade it to do was to copy files into an archive from the command line, as there is no obvious way to get it to claim the memory it needs before the copy command grabs it all.

PackDir

There are two main differences between *PackDir* and the other programs covered here. The first is that it's freeware, and the other is that it's only possible to compact whole directories at a time and the sole way to get files out again is to decompress the whole archive.

It's a very straightforward program to use, and is exceptionally fast. Also, the fact that it's freeware is a big bonus.

CFS

CFS is another odd one out. It's not an image filing system and it stores compressed files individually, rather than in one single large file. This is an advantage in terms of durability, as the chances of more than two or three files getting damaged in the event of a machine crash is extremely unlikely – whereas with the others one crash could potentially cause the entire archive to be lost.

In use it behaves like an extra hard disc, with an extra icon appearing on the iconbar for each disc you want to compress files on (with the disadvantage that you soon run out of screen width if you have a couple of drives).

This does have the advantage that it's totally transparent in operation – to compress a file, all you do is save it to a filer window opened from the *CFS* icon rather than the normal one. It's also very simple to configure.

Although it's a fairly old product now, it does manage to produce compression ratios and speeds in the same class as *ArcFS*.

Comparisons

To compare the tools I used three different sets of files:

- A selection of utilities
- A copy of the *NewsHound* distribution
- A random selection of clip art

TBAFS was tested in both 'Fast' and 'Max' mode, and *SparkFS* for 'zip deflate' and 'sparkive'.

Three tests were performed:

- Time to compress
- Compression ratios
- Time to delete all the files from the clip art archive

TBAFS's main advantage is speed. In my tests, *TBAFS* was consistently the fastest image file system. Its compression times are around 10 times faster than *SparkFS* in zip mode.

SparkFS running in zip mode consistently produced better compress ratios than the other tools, although this is at the sacrifice of speed.

ArcFS, *PackDir* and *SparkFS* sparkives all produced similarly sized files – but *PackDir* was consistently faster.

There are two other points worthy of mention. Firstly, *ArcFS* and *SparkFS* support encryption of files within archives (*TBAFS* also supports encryption, but you can only encrypt the complete archive).

Secondly, of the programs considered here, *SparkFS* is the only one which can read and write archive formats that are usable on other platforms (for example, unix, Windows and Macs can all handle zip files).

Overview

It's impossible to pick one of the programs and says it is the best as they all have their own strengths and weaknesses. Therefore I'm going to make three different recommendations depending on your intended use.

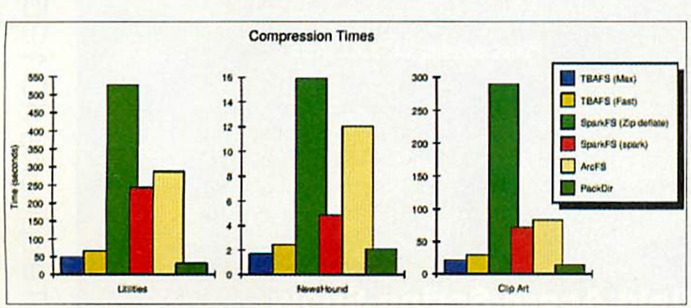
If you're looking for the tool to save you hard disc space on frequently accessed and changed files, the program for you is *TBAFS*.

However, if it's a way to compress files that you'll probably never need again you have a choice – *PackDir* is fast and free, but if you want to retrieve files you have to uncompress the complete archive. *SparkFS* in zip mode is slower, but compresses better and allows you to access individual files inside one archive.

The last recommendation is *SparkFS*, again producing zip files, which is quite clearly the best way to store files when you want them to be as small as possible (for example, for magazine cover discs). The only disadvantage is that if you send the archive to someone who doesn't have *SparkFS*, they won't be able to run applications straight from the archive. If this is a requirement, *TBAFS* is the best contender due to its consistent memory requirements compared to *ArcFS*. AU

Time taken to delete the contents of the clipart archive (PackDir excluded as it can't perform this operation)

Compressed file size, as a percentage of the original



Time taken to compress the test files

Product details

Product: TBAFS
Price: £24.99
Supplier: TBA Software
Address: Mead Farm, North Road, Timsbury, Bath, BA3 1JH
Tel: 01761 470003
E-mail: tba@tbalond.demon.co.uk
WWW: http://www.tba-softare.co.uk/

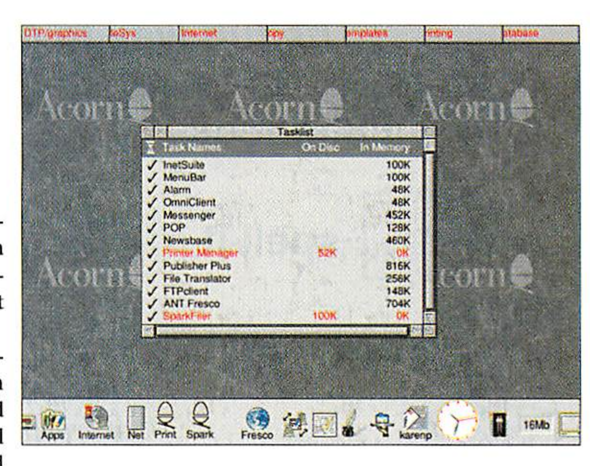
Product: CFS
Price: £29 + VAT
Supplier: Computer Concepts
Address: Gaddesden Place, Hemel Hempstead, Herts, HP2 6EX
Tel: 01442 351000
E-mail: info@cconcepts.co.uk

Product: SparkFS
Supplier: David Pilling
Price: £25
Address: David Pilling, P.O.Box 22, Thornton Cleveleys, Blackpool, FY5 1LR, UK.
E-mail: david@pilling.demon.co.uk
WWW: http://www.netlink.co.uk/users/pilling/

Product: ArcFS
Price: £24.99 + VAT
Supplier: Argo Interactive (VTi/Eclipse)
Address: 7 Dukes Court, Chichester, PO19 2FX
Tel: 01243 815815
E-mail: enquiries@argonet.co.uk
WWW: http://www.argonet.co.uk

Product: PackDir
Supplier: John Kortink
Price: Freeware
Address: Nutterbrink 31, 7544 WJ Enschede, The Netherlands
E-mail: kortink@inter.nl.net
WWW: http://www.inter.nl.net/users/J.Kortink/

RAMplify



If you're one of those people whose desktop is always overcrowded with 101 useful but memory hungry applications, *RAMplify* could be just the solution you need. I'll make no bones, BSE contaminated or otherwise, about it – I like this application, it's good.

Its purpose is clear from the name – it allows your computer to behave as though it has more RAM than it actually does. How this is achieved is less obvious, so I shall endeavour to explain.

I wouldn't go as far as the robust packaging and neat little A6 manual claim – that it is the '. . .alternative to hardware memory upgrades' – however for one of the most common causes of memory shortage, that of needing to run several applications concurrently, it has to be as good a fix as is possible, short of going out and buying yourself some more RAM.

What *RAMplify* does is allow you to temporarily suspend and swap out an application, its files, and all of its workspace to hard disc, freeing up the memory it occupied for use by other programs. This freezing out of tasks can be done either manually, via a couple of clicks in the Tasklist window, or automatically by *RAMplify* if a particular application is inactive for more than a preset period.

Swapping back in an application is equally easy – even double-clicking on a file owned by a suspended application will cause it to be reactivated and the file loaded as normal.

Before *RAMplify*, the only alternative approach would have involved selection of a little used application, saving all its files and quitting, subsequently followed by reloading and all the hassle necessary to set up the program, its windows and so forth again, as they were before the quit. All this can now be done with a few clicks of the mouse.

This isn't merely a small time-saver – since the process takes virtually no thought and only a second or so, unlike the laborious alternative. It makes this kind of swapping in and out of memory a practical method for dealing with RAM shortage in the desktop.

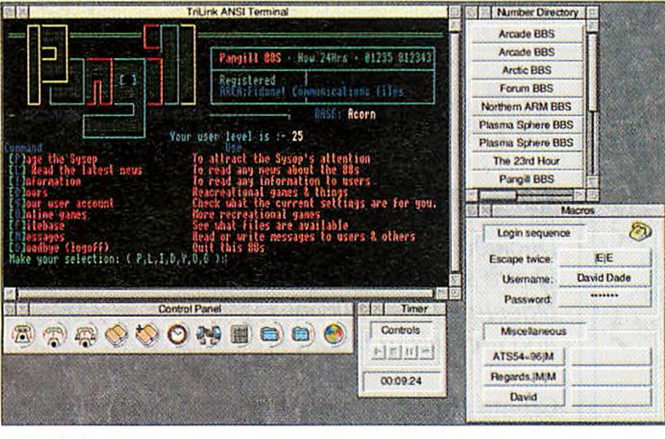
RAMplify appears to be well thought out and thoroughly tested, as such a piece of software needs to be. It is more than adequately documented and has a plethora of user configurable options to enable it to sit comfortably on many a system. Reward yourself and the author Eli-Jean Leyssens – buy it.

Stephen Baxter

Product details

Product: RAMplify
Supplier: Werewolf Software
Price: £19.95 + P&P
Address: 23 The Spinneys, Bromley, Kent, BR1 2NT
Tel: 0181-289 6003
E-mail: info@werewlf.demon.co.uk
WWW: http://www.werewlf.demon.co.uk

TriLink



TriLink is a budget ANSI and VT100 COMMS terminal package for Acorn 32-bit computers that aims to be simple to set up and easy to use. The Installer program claims to get you online within 10 minutes, so I timed myself following instructions to the letter. From inserting the floppy to logging in to Arcade BBS took eight minutes.

The floating 11 button control panel gives access to most of the terminal functions. The icons are illustrated quite clearly as hangup, manual dial, answer, dialling directory access and editing, call timer, file transfer and buttons to open the upload and download directory displays to easily find what you have just received.

In the review version, a button selects text and graphics character colour rendering in either the ANSI eight bright colours or the Acorn Desktop palette. Bajorasoft have now removed this limitation and the current version of *TriLink* correctly shows all 16 ANSI colours and shades in 256 colour screen modes.

The ANSI display window features standard effects such as graphics characters, flashing and italic (slanted) text highlights. The characters are composed on an 8 x 8 matrix rather than the more usual ANSI 8 x 9. The resulting line spacing is a little closer than I find comfortable but makes for a compact display area. The VT100 emulation is basically the same as ANSI but in white on black.

TriLink doesn't support logon scripts but offers a Macros window with a set of nine clickable icon buttons that can be configured to send frequently-used character strings such as your BBS user name and password. Strangely there isn't a control panel button to open the macros window, but Bajorasoft will be adding this to future releases.

File transfer by Z-modem, Y-modem, X-modem and ASCII upload are provided, accompanied by a progress bar with character count and transfer speed, which worked faultlessly in both directions. I was pleased to note that *TriLink* always renames duplicate files, useful when the source item you're downloading is always called 'scratchpad'.

TriLink faces quite stiff competition with its market placing on price somewhere between *HearsayII* and *Connector*, but for a user wanting a quick and easy introduction to bulletin board comms, it could well be the terminal of choice.

David Dade

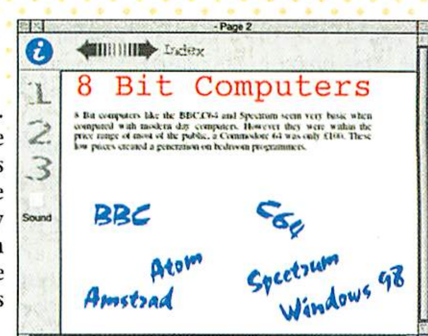
Product details

Product: TriLink COMMS terminal
Price: £15
Company: Bajorasoft
Address: 59 Marion Crescent, St. Mary Cray, Orpington, Kent, BR5 2DF
Tel/Fax: 01689 877586
E-mail: info@bajorasoft.demon.co.uk
WWW: http://www.bajorasoft.demon.co.uk/





Multimedia for all



Only a short while ago, software for generating multimedia presentations was coming out thick and fast. Then nothing – until recently that is, when a company called XD International contacted me about their new program: *ArtScape*.

ArtScape is not designed to compete with the heavyweights like *Genesis*, but to allow the creation of simple 'talking books'. These can have music files attached and questions included. You can also launch applications from any page which allows you to run sound or graphics in a format not supported by *ArtScape*. On the subject of file formats, *ArtScape* supports basically three: Text, sprites and QTM music files.

The feature I found most interesting is the arrangement of 'buttons'. In most programs of this type, the user can position as many on-screen buttons as required and in any position. *ArtScape* allows just three buttons per page, which are positioned on a pane in the top left of the screen. In fact, this feature clearly demonstrates the simplicity of the program. Even very young children can easily create acceptable talking books with this software.

The Acorn computer has a painting program built in (*Paint*). All you really need is a sound recorder which will output files in QTM format and you have all you need for children to create some talking books.

ArtScape costs just £14.95 from XD International who may be contacted on 01978-264929.

Head controlled mouse

SEMERC are well-known for their commitment to developing hardware and software for those with special needs. Their latest product is a head operated mouse for those who wish to use a computer, but only have head movement and therefore cannot operate a traditional hand held mouse.

By means of a small lightweight device worn on the head, infrared signals are sent to a receiver on the desk which then communicates with the computer and controls the mouse pointer. This system requires no special connections or software and costs about a third of the price of other comparable systems.

SEMERC
Tel: 0161-627 4469

New on the block

Just when you thought you had IT down pat, they go and change the phrase. It seems you can only be taken seriously if you have a TLA – three-letter acronym. You'll soon find schools bursting with ICT Coordinators rather than IT Coordinators. Information Communications and Technology first saw the light of day in the Stevenson Report, commissioned by Messrs Blair and Blunklett, that was published last spring, to be later adopted as Labour government policy.

Not to be left out, Xemplar Education have issued *ICT in Schools: A new reality*, an independent report exploring current information technology funding issues for UK schools. This reveals that there isn't that much money around in our schools to bring about the glorious future of a National Grid for Learning. Money earmarked for purchasing additional computers, modems, online subscriptions and the like amounts to around £1,500 per school.

Xemplar's MD, Brendon O'Sullivan commented: "With the National Grid for Learning, the government has stated clearly its intention to raise standards in education. To achieve this goal will mean that all children must have quality access to ICT equipment. Obviously, there is a limit to the public purse and if we are going to reach the desired levels of ICT in schools, alternative sources of funding must be found quickly. The private sector is the obvious choice, but partnerships need to be developed rather than simple cash donations." So don't expect the price of Risc PCs to plummet for schools, but do encourage everyone you know to shop at Tesco!

Tesco

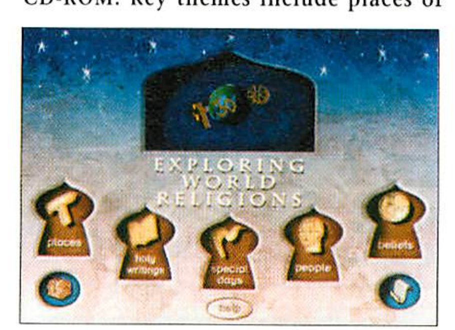
The Tesco Computers for School scheme is almost over for another year. The seventh scheme was launched much earlier this year (usually it's in May) and for the first time the scheme was also sponsored by a second company. Various voucher deals were available with promotional packs of Coca-Cola.

Spreading their arms even further, Tesco wrote to numerous businesses to encourage them to 'adopt a school'. The theory here was to encourage staff to collect vouchers and give them to their adopted school rather than put them in the bin.

Now it's time to spend the vouchers. I look forward to reporting about various schools' successes in due course.

Exploring Religion

One of the most popular programs at my school is *Aspects of Religion* from YITM. Following on from that success, YITM have now released *Exploring World Religions* on CD-ROM. Key themes include places of worship and pilgrimage, people, holy books, festivals and beliefs.



Pupils experience the impact of each religion on daily life through the eyes of real children who are living by these faiths. The software focuses on six religions and is suitable for Key Stage 2.

YITM
Tel: 0113-243 8283

Contacting me

You can contact the Education page by writing to me, Geoff Preston at *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP or by e-mail to: aueduc@idg.co.uk



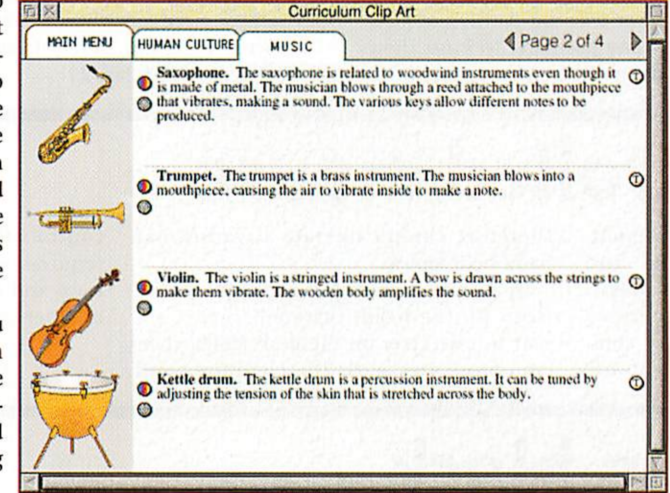
Geoff Preston looks at three useful educational resources

Sherston Secondary Clip Art

Whenever I see the words 'clip' and 'art' on the same line, I usually lose consciousness. But the name Sherston on the same package is an effective antidote.

Sherston are well-known for some innovative and exciting software for Key Stage 1 and 2. They are now moving into the secondary market and their first product is a CD-ROM containing a range of clip art, mostly vector graphics (the sort of thing produced in *Draw*) with a few bit-mapped images (the sort of thing produced from a digital camera or scanner).

What's interesting about this clip art collection is that it isn't *just* a clip art collection. The problem that software houses have encountered since the dawn of the clip art age is how to make the images easily accessible to the end user. The problem has, to a large extent, been exacerbated with CD-ROMs because of the staggering number of images which can to go onto a single disc.



Locating the exact image you want can be a rather uncertain business. Several companies have tried various methods of indexing. One company even supplied a fairly thick book cataloguing the contents of the disc.

Sherston have cleverly provided a 'front end' to the collection of drawings which effectively allows the images to be divided up into sections. Each section is further subdivided which provides the user with 20 or so images on a single theme. These can be accessed relatively quickly and with a good deal more certainty than is often the case.

Having broken down the images into themes, Sherston have taken the next logical step and provided a few lines of text alongside each image. This gives the whole product a mark of respectability, by virtue of the fact that it is no longer just a clip art library – personally, I would like to see it go a little further with more text bringing it closer to being a serious reference work.

Once the required picture is displayed as a thumbnail, clicking on a button to the right of the image will open a standard Save dialog. The icon may then be dragged into a filer window or into any document which supports drawfiles. (The disc is triple platform and when used on a PC or Mac, clicking the buttons places the image into the clip board. CTRL+V will paste it into a suitable document.) Some drawings have two buttons giving the choice of either a colour or a black and white picture.

To the right of the save buttons are a couple of rows of text and to the right of that is another button which will enable the user to save the text.

The quality of the drawings is truly astonishing. Untold hours must have gone into producing them. Sherston then sell it for a pitiful £79.95 including a full site licence.

Sherston Software
Tel: 01666 840433
E-mail: info@sherston.co.uk

Full marks for science coursework

All secondary school students study Science. For most Year 10 and 11 students, this will be Dual Award Science which involves coursework set and marked by the teacher(s). The specifications for this coursework have changed from this year. There now must be work from all three sciences (biology, chemistry and physics – known as Sc2, Sc3 and Sc4 respectively) and is to be marked in four categories – Planning, Obtaining, Analysing and Evaluation.

Such work is called an investigation. The rules governing how the investigations are marked is complicated to say the very least. For example, not all four categories need to be marked in any one investigation except in one case, and the final mark must be made up from at least one mark from each of Sc2, Sc3 and Sc4. All four categories must contribute to the final mark to give a total out of 63.

Details of five software solutions to aid science teachers have been circulated by the examination boards. *ScICswk* (Science Coursework) is the only one for Acorn.

This RISC OS compliant software takes into account all of the 'ifs' and 'buts' written into the rules for marking science investigations. The list of features is impressive and seems to cover every eventuality. It will hold marks for up to 200 pupils and up to 18 experiments. Names can be taken from SIMs produced textfile or from a spreadsheet. Marks are entered and the program finds the best marks that match the criteria. Processed files show which student marks are used and from which experiment and skill area. It also indicates those who fail to reach the criteria.

Processed files can be saved as a CSV file and entered into a spreadsheet for submission to the examination board (Board permitting). An optional extra is *SciPrint* which will print out the names and marks ready to be sent to the board.

ScICswk costs £25. For further details contact P Pibworth on 01452-614428.

RECORDS

Pupil 01 Pibworth, Paul SPG *

No	Date	Title	P	O	A	E	2	3	4	I
1	12/12/1995	Peanut burning	8	1	8	1	✓			✓
2	01/03/1996	Marble + HCl	3	2	3	4		✓		✓
3	25/12/1995	Treelights	2	2	7	6			✓	
4	05/06/1996	Wormcastes	2	2	8	1	✓			

Science catalogue

Described as an independent critical catalogue of science software, this book by Roger Frost lists just about every program for all platforms which could be used to deliver science across all Key Stages.

It opens with an introduction entitled "Why use computers in science" which provides some useful pointers to teachers of both IT and Science.

There then follows about 100 A4 pages listing software in categories. Each piece of software is given a star rating, age range and an overview of how the software can be used.

Software for Teaching Science is published by IT and Science and sold through ASE Booksales, tel: 01707 267411, bookshops and several science catalogue firms. Its ISBN is 0 9520257 5 2 and costs £17.50.

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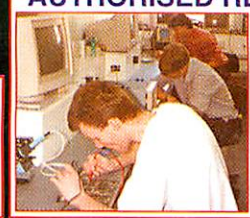
Showroom Address:
Dept. ACU, Unit 3, Armley Park Court
Stanningley Road, Leeds. LS12 2AE

Please allow five working days for cheque clearance. Prices are correct at the time of going to press. Please check latest prices before ordering. All sales are subject to our standard terms and conditions of sale. Copy available upon request. E&OE. Dated 20/3/98





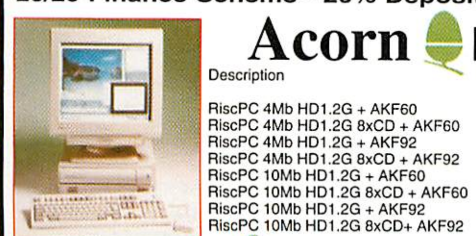
AUTHORISED REPAIR CENTRE



Our in-house engineers can offer you a no-obligation **FREE** estimate of repair on your Acorn or any computer peripheral. A delivery tariff of just £5.00 is charged or alternatively, visit our large showroom. We can also arrange for your items to be collected by courier for an additional charge of £11.00

Acorn Computers

0% Interest Free Finance On All Acorn Computers
20/20 Finance Scheme - 20% Deposit, Then 20 Monthly Payments





Acorn Risc PC — STRONGARM (233MHz)

Description	Our Price	Deposit	Balance	Payments No PPP	Payments with PPP
RiscPC 4Mb HD1.2G + AKF60	£1,344.99	£269.00	£1,075.99	£53.80	£57.73
RiscPC 4Mb HD1.2G 8xCD + AKF60	£1,426.99	£285.40	£1,141.59	£57.08	£61.25
RiscPC 4Mb HD1.2G + AKF92	£1,706.99	£341.40	£1,365.59	£68.28	£73.26
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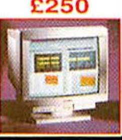
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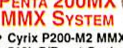
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star info

Dave Acton and **Dave Lawrence** put more progs and puzzles your way

Back to basics

Author: Dennis Ranke

Our good German friend **Dennis Ranke** has been busy again and he's sent us a cunning little module called *BasicDir*. Once loaded it provides a system variable called *<Basic$Dir>*.

This behaves in much the same way as *<Obey$Dir>* for obey files; when an obey file is run, the variable *Obey$Dir* is set to contain the full path name containing the obey file, this greatly simplifies the task of loading resources, code, etc. As you might be able to guess, Dennis's utility sets the variable *Basic$Dir* when Basic programs are run.

Basic progs often need to load in some data or a sprite file or something, and rather than turn the whole thing into a !'ed application directory, this variable lets you simply *Sload <Basic$Dir>.Sprites or whatever.

Dennis has also provided commented source code if you are interested in examining how the code works.

It's a shame things like this aren't in the OS.

Mind the gap

Author: Philip Mellor



Philip Mellor's *RopeBridge* is just the thing to use to get in a little training for your next Indiana Jones style cave, baddies, spiders, golden idol and gigantic rolling rock weekend away.

Move the mouse left and right to either gingerly tiptoe or brainlessly hurtle across the rickety bridge suspended above the seemingly bottomless pit. (We say 'seemingly' as it does in fact have a very nice bottom).

Philip has thoughtfully provided a choice of bridge – you can pick either a standard 7 section; the deluxe 11 section; the super-deluxe 17 XL or the positively executive 21 GTi.

Faster machines are recommended for the top end options. When you have had enough practice, press Escape to quit.







Piping hot

Author: Justin Fletcher

If you've used Unix you'll know how nice it can be to perform a task and, depending on the result, do something else. Take, for example a simple 'list all files and show the symlinks'; this might be done as something like *"ls -al | grep '->'"*. While this probably isn't the best example of pipes, it does illustrate the point that this is impossible under RISC OS in a single command.

Squiggly pipes is a module from the infamous **Justin Fletcher** stable and allows you to do a similar thing to the above Unix command with the line *"ex { | grep Link }"* (ex is the equivalent of *ls -al*, SymLinks have the filetype 'Link'). Notice that the pipe usage is almost identical to the redirection usage *"command { < | > file }"*.

Any line with *{ | <anything> }* will be parsed as a piped command. The piped command *must* be the last thing on the line; anything after it will be ignored at present. Pipes may be nested, but you should remember to include the correct number of closing brackets.

The art of Redirection

Pipes are implemented using both the RISC OS and C redirection systems. If a program is recognised as C it will have an input, or output (or both) appended to its command line; otherwise a standard OS_ChangeRedirection call is issued. C programs are recognised as such by the signature &EF000011 at &8010, so if you have a basic program which uses C style IO you should modify it to contain a !&8010=&EF000011 *before* the OS_GetEnv line. Conversely, to ensure that you know how much data to read from the input if using 'GET' (etc) you should do something like:

```
    SYS "OS_ChangeRedirection",-1,-1 TO i% : IF i%<>0
THEN left%=EXT#i%-PTR#i% ELSE left%=0
```

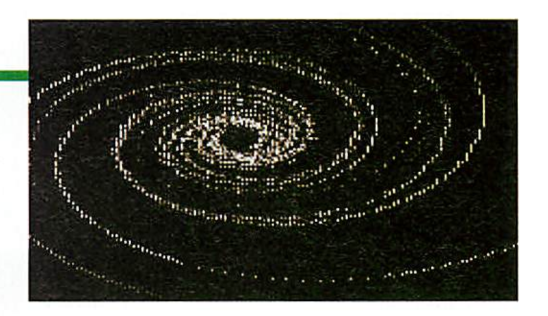
Error redirection is not performed in C, and should still result in output to the screen in much the same way an error would in assembler or for built-ins.

Assuming you have *grep*, here are a couple of fairly useful examples:

```
*Help . { | grep ==> }
*Modules { | grep Filer }
```

Why have cotton?

Author: Scott Boham



In the time-honoured tradition of *info, here's a small graphical ditty from **Scott Boham** that just kinda happened. It's quite amazing how many classic *info effects have been born out of a wrong GCOL, badly placed ASL or hideously deformed sprite op. We're not entirely sure what Scott *was* trying to achieve with *Galaxy9* (and 27), but the actual outcome puts a subtle spin on the standard dots-flying-out-from-the-centre effect.

Galaxy9 runs in mode 9, and *Galaxy27* in er, mode 27. If Scott had written a mode 3 version as well, then we could have had 3, 3 and 3.

Deadlier than the mail

Author: Jon Ripley

Typing mail to upload to your favourite BBS can be a tedious task, you have to remember which headers to use and sometimes you have to type 'Subject:' before the subject or even include a password. If you find this a chore, then **Jon Ripley** may have the ideal solution.

!MailFormt was written to take away all the hassle of writing mail. Just type your mail, following the guidelines below, and then load the mail into *!MailFormt* and it will do all the hard work for you and give you a copy of your mail file ready to upload to the BBS.

Typing your mail

When typing your mail you don't need to have *!MailFormt* loaded, just use your favourite text editor (*!Zap*, *!StrongEdit*, *!Edit*, etc) and save your mail as a text file. *!MailFormt* fixes the double linefeed bug that many BBSs suffer from when uploading mail, so if your paragraphs have been squished together in the past, they won't be anymore – unless you want them that way!

Precede the e-mail address, [local] user name or netmail address with a '>' and type the subject on the next line. There is no need to type 'Subject:'. If you are using Arcade BBS you can omit your password as well. This gets inserted automatically.

```
>nobody@just.a.test.com
This is the 'Subject'.
Hello World
```

To write a message to an echo area, precede the echo area number with '>@' followed by the echo number and either '->' followed by a name or '#' followed by a message number. As above, put the subject on the next line. e.g. to reply to message 12345 on area 67...

```
>@67 #12345
```

!MailFormt has a built-in address book. Assuming you have filled this in, you can access entries in the book by using >>name.

You can have as many messages in one text file as you like. Just follow each message with another, you can even mix and match the normal BBS mail headers with the 'easy' ones that *!MailFormt* provides if you really want.

Obviously beware of using < and > as the first character on a line in your message, otherwise the program will think you are starting a new message.

Formatting the mail

Once your mail is typed and saved, *!MailFormt* should be loaded. Drag your text file onto the *!MailFormt* icon on the iconbar (or into the main program window if it is open). The name of your file will appear in the window. The name of your mail file appears next to the 'mail file' icon and this is the file that *!MailFormt* will reformat.

Now you should choose the BBS that you are going to use from the pop-up menu. If you choose 'Arcade BBS' you will need to type in your e-mail password in the 'password' icon.

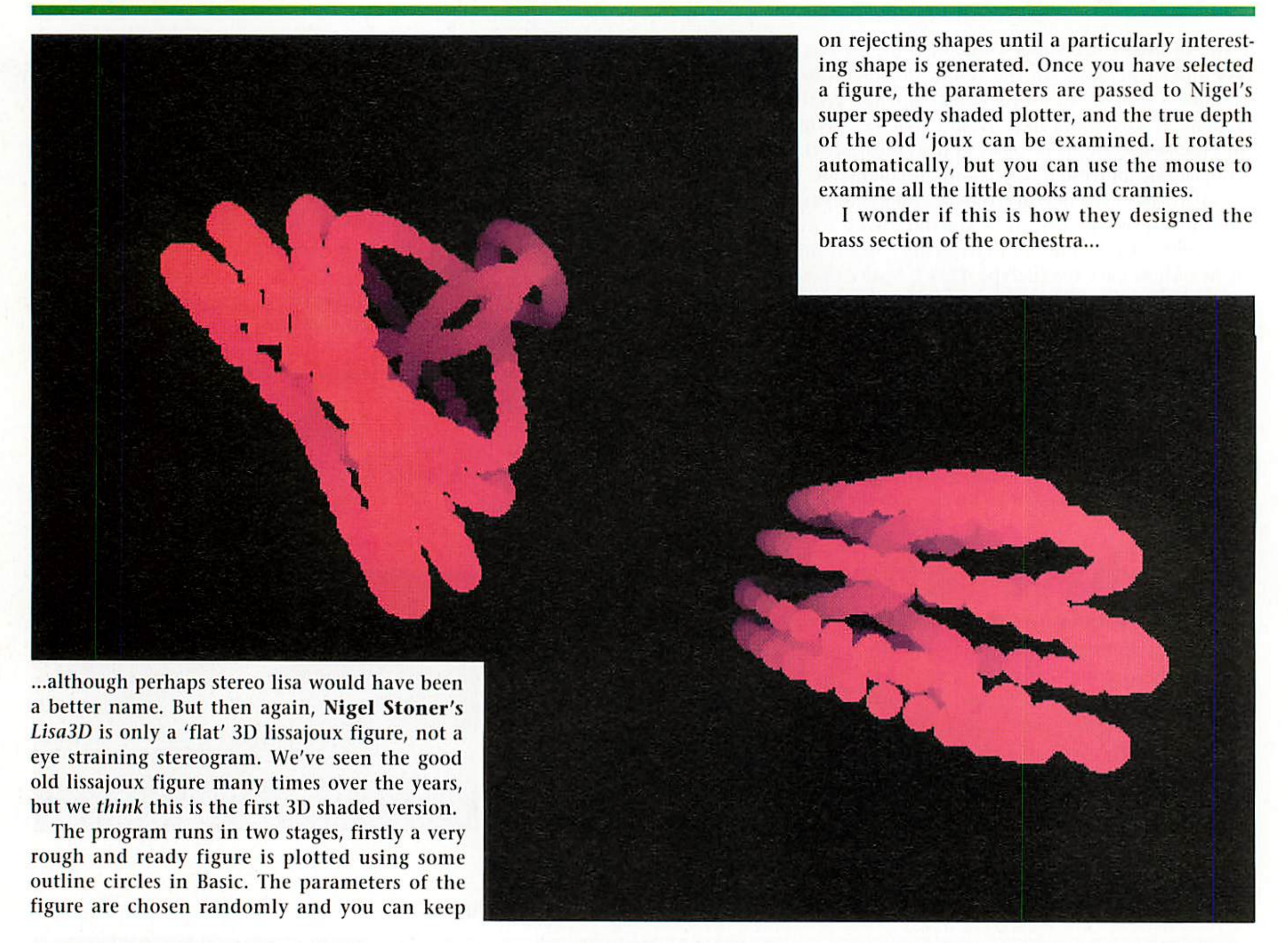
Click on the 'Reformat' icon and a standard save box will open. Once saved, your mail is ready to be uploaded.

The Address book

Each entry in your address book consists of two names and a mailing address separated by a comma (and no space). Having two names allows you to have the person's full name and a handy abbreviation.

Mono Lisa

Author: Nigel Stoner



...although perhaps stereo lisa would have been a better name. But then again, **Nigel Stoner's** *Lisa3D* is only a 'flat' 3D lissajoux figure, not a eye straining stereogram. We've seen the good old lissajoux figure many times over the years, but we *think* this is the first 3D shaded version.

The program runs in two stages, firstly a very rough and ready figure is plotted using some outline circles in Basic. The parameters of the figure are chosen randomly and you can keep on rejecting shapes until a particularly interesting shape is generated. Once you have selected a figure, the parameters are passed to Nigel's super speedy shaded plotter, and the true depth of the old 'joux can be examined. It rotates automatically, but you can use the mouse to examine all the little nooks and crannies.

I wonder if this is how they designed the brass section of the orchestra...

Taken down a peg or two

Author: Chris Johns

JScrnSave is not a name that beats around the bush. If you knew that the command *ScreenSave* saves a bitmap of the screen to a file, it would probably not take you long to guess that *JScrnSave* does exactly the same, but uses JPEG compression to reduce disc space (and, of course, image quality). When **Chris Johns** wrote it, he certainly knew how to aptly name a utility.

The utility does not do any JPEG compression itself, but uses the *CompressJPEG* module. First of all the size and depth of the screen is established, and these are used in the CompressJPEG_Start SWI. The screen is then taken line-by-line and given to the module.

The pixels are read directly off the screen, and the program translates the values into the RGB bytestream needed by CompressJPEG.

Finally, when all the lines have been processed, the SWI CompressJPEG_Finish is called, and the output file is saved onto disc.

To help make the process as fast as possible, there are hand-coded veneers for CompressJPEG_WriteLine and Hourglass_Percentage, as there are called from within the main processing loop for every line, and the hand-coded veneers are faster than using the general SWI calling functions.

The JPEG screen saver will work in all modes with 4 or more bits per pixel, i.e. 16 colours and up. Chris has provided the full (C) source code for the utility.

Off at a tangent

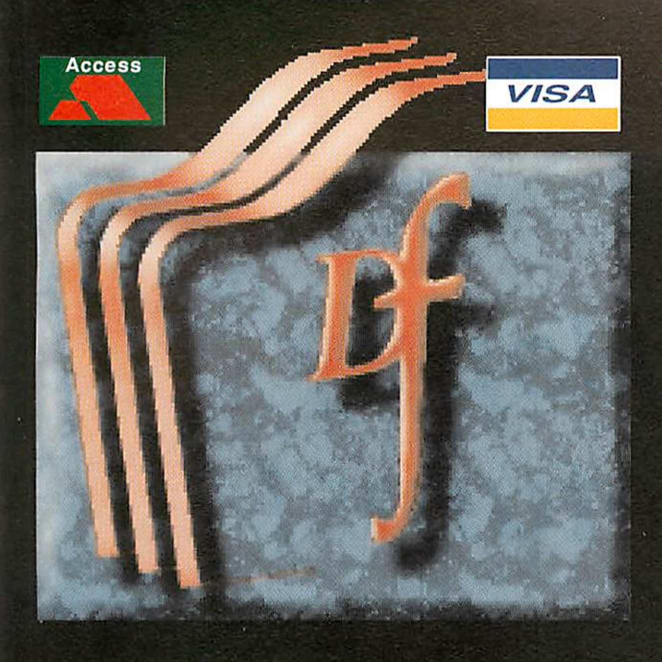
Author: Mr Reysenbach

Following on from last month's Mersenne prime routines, **Mr Reysenbach** has sent us some sine and cosine routines that make use of the StrongARM's UMUL instruction.

The main program is *COSI*. This calculates COSRAD and SINRAD of a signed 7-byte value passed in R0 (A%, the integer part) and R1 (B%, 3-byte fraction part, i.e. (a-INT(a)) * (1<<24)). The routine has a very small deviation when the angle nears zero, but on average only 50 instructions are needed to calculate the sine or cosine. The innards of *COSI* are also available in three separate programs – sine, cos and rad which perform the various bits of maths separately.

Fast trigonometry is normally performed by 'cheating' – precalculating a look-up table, a sine or cosine can then be executed with a simple LDR.

There are cases when this might not be possible though – if memory is at a premium and it is just not possible to store all the values required. In this situation speedy calculation routines could prove invaluable.



The Datafile

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Shake a peg

The other Dave got me a lovely, handmade wooden puzzle for my birthday. Normally, I wouldn't bother you with such personal trivia, but I thought the *info readership might like to have a go at solving said puzzle, and so knocked up a quick desktop version.

In the original version, the name of the Cornish town POLZEATH is spelt out on eight wooden pegs around the board, starting at the red position. The object is to move the pegs around until the same word appears but starting at the yellow hole. It can be done in under 30 moves.

There are only two differences between the original version and mine. Firstly, STARINFO rather than POLZEATH is spelt out by the pegs. Oh yes, and secondly, the original was beautifully and lovingly fashioned out of finest wood by an expert craftsmen. My version was almost-as-lovingly but not-quite-as-beautifully fashioned from finest C.

To play, simply double-click on *!SIpuz*. Move a letter to the empty hole by clicking on it. If you solve the puzzle, a small congratulatory message will be displayed, telling you how many moves it took.

The number of moves is also shown at the bottom of the window, and two arrow keys allow you to undo (and redo) your moves to allow faster experimentation. The Restart button resets the board to its starting position and if you get desperate, the Solve button will demonstrate the solution at a rate of one move per second. There are in fact two solutions that take fewer than 30 moves, and many more that take exactly 30. You will be asked to confirm that you really give in before the answer is given away!

Solving the puzzle

Now, one of the great drawbacks of being a programmer is that when you get really stuck trying to solve something like this, there is always the possibility that you might be able to knock up a program to do it for you. That, alas, is the story of the Polzeath puzzle. Having got stuck at a 32 move solution, I ashamedly admit that I gave in and wrote *Solve* to see how it could be done.

Solve is quite an interesting exercise in how to go about solving puzzles like this, so we have included it on the disc. Here's how it works – don't read this if you haven't solved the puzzle and don't want any clues to find out how!

The first stage to solving the puzzle is to realise that STARINFO is going to end up being spelt anticlockwise rather than clockwise. This takes a bit of lateral thinking I suppose, and you can probably prove quite simply that it isn't possible to spell the word clockwise from the yellow position. (It's one of those "odd-even" type affairs I imagine, rather like proving you can't do a knight's tour on a chess board with two black corners missing.)

Although the board is round, the puzzle is effectively played out on a square 3 x 3 grid, where moves are only possible in the vertical and horizontal directions. This setup obviously lends itself to programming! So I defined a structure in C for a hole which contained various items:

```
start letter
letter in solved puzzle
x and y co-ordinates
number of adjoining holes
list of pointers to adjoining holes
```

I then defined a board as a 3 x 3 array of holes using this structure, and for speed, added a special 'terminating' hole afterwards. When using multi-dimensional arrays in C, if you keep referring to elements as e[x][y] it can be costly in terms of execution speed. Far better to use pointers and treat the array as one-dimensional where possible. Then you can simply skip through it until you come to the terminator. This compiles much more efficiently (using one less register for variables apart from anything else) – vital when solving problems like this.

Now, because the shortest solutions turn out to be 28 moves, the recursion involved in finding them at first seems daunting. However, there are usually not many choices available. At first, there are four possibilities, but this is an exception. For most of the holes, there are only two or three neighbours, and since there is no point in moving the same peg twice in a row, for many of the levels of recursion there is actually only one move available.

So on a StrongARM, the first solution was found in about four seconds – not bad considering we don't use much intelligence in the solving process. We do check to see if we have come back to the starting position – there would be no point in going on from there. We could also have done some more optimisation if it was obviously going to take a prohibitively long time to get a result.

For example, it would be fairly easy to work out how many moves a peg was from its destination at any one time. Since we fix the maximum depth of exploration, we could check part way through our tree to see if a solution is going to be physically possible given the remaining number of moves available. In most cases, the answer would be no, so large branches of the tree could be pruned.

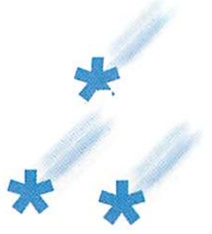
The output from *Solve* is not particularly friendly – an 'x' simply indicates which peg is to be moved. *SIpuz* simply contains a table of moves, fed in manually from the output of *Solve*.

Of course, this electronic version of the puzzle doesn't do much justice to the real thing. If anyone is interested in the genuine, handmade article, the original wood puzzles are made by *Signpost Crafts, Polzeath, Cornwall, PL27 6ST*. And if anyone else has converted a traditional puzzle to play in the desktop we would of course be delighted to see the result.

No help at all

For some reason (a technical one most likely) the help file that accompanied Justin Fletcher's *EE* utility on the March cover disc had been severely hacked about, and was subsequently of little help to anyone. We apologise to Justin and have included the unabridged text file in his (now quite regular) directory on this month's disc.





Cookie monster

Author: Jan Vibe

No monster actually, just kindly Danish uncle **Jan Vibe** with some fortune cookies. He admits that "this program is actually dead boring. All it does is display boring old fortune cookies. The effect is in the way it displays them.



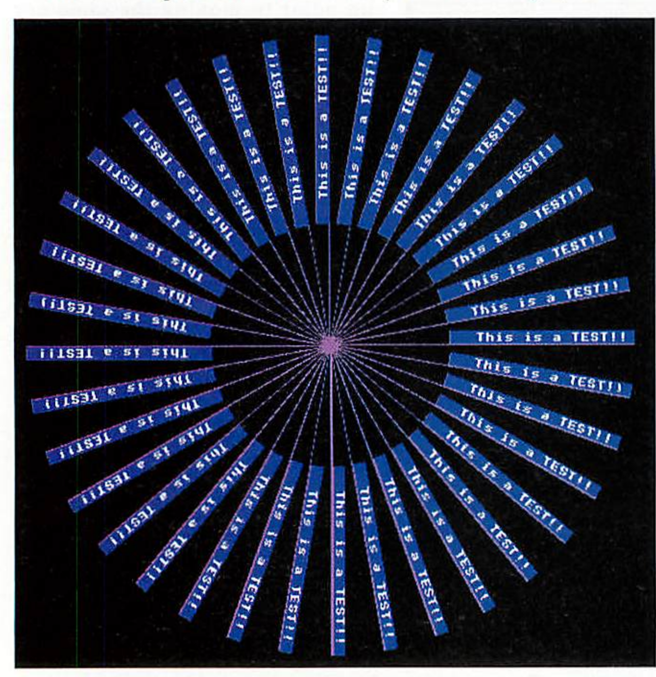
"They are written into graphic windows on the screen, and the windows are angled. The effect is achieved by switching the output to a sprite, and writing in this sprite. After each character is written, output it switched back to the screen and the whole sprite is plotted at an angle.

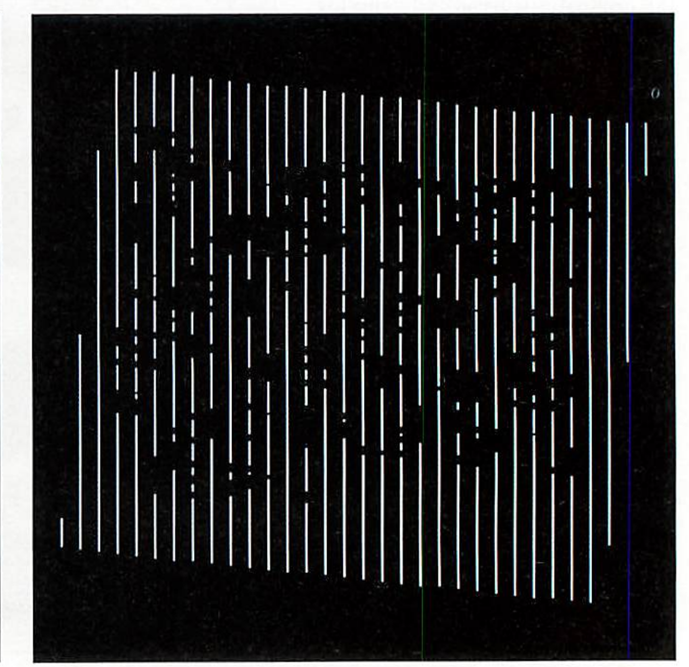
"There are two problems here: firstly, how to plot a sprite at an angle. This is done by using the SWI OS_SpriteOp 56 which can scale and rotate a sprite.

"The second problem is that when you switch output, the text cursor is placed in the upper left corner. This problem is dealt with by using the two least used basic commands of the whole Basic language: POS and VPOS, which gives the text cursor position. Now the text cursor can be placed into the sprite window with a simple VDU 31 command. It looks rather weird doesn't it?"

Certainly does Jan, and to demonstrate the business of rotating sprites a little more, we have included a couple more demos from Jan.

Rotate simply shows how Sprite_OP 56 is used to rotate a sprite around its bottom left corner. *Rotate2* takes the process one stage further, and shows how sprites can be rotated and scaled at the same time. This procedure is the one employed by *Cards*.





*QUIT

All submissions – useful, pretty, silly or strange to our usual address please:

***INFO, *Acorn User*,**
IDG Media, Media House, Adlington Park,
Macclesfield SK10 4NP
or e-mail us (including your real address please) at:
austarinfo@idg.co.uk

No submission should exceed 100K. Extras like screenshots and diagrams are always welcome, but try to keep e-mail submissions under 100K please. Remember that we have limited cover disc space, so will not be able to carry vast applications however nice they are.

You needn't include a letter but please put your name, address and program title on every disc and include a text file containing your name, address, disc contents and program details. A SAE will ensure your discs are returned. As always, *info submissions only please.

Compatibility table

Program	ROS 2	ROS 3.1	ROS 3.5+
Cards	No	Yes	Yes
Rotate	No	Yes	Yes
Rotate 2	No	Yes	Yes
Lisa 3D	No	Yes	Yes
!Slpuz	No	Yes	Yes
!Mail Formt	Yes	Yes	Yes
cos	No	Yes	Yes
cosi	No	Yes	Yes
rad	No	Yes	Yes
sine	No	Yes	Yes
BasDir	Yes	Yes	Yes
RopeBridge	No	Yes	Yes
JSCRN SAVE	No	Yes	Yes
Sq Pipes	No	Yes	Yes
Galaxy 27	No	Yes	Yes
Galaxy 9	Yes	Yes	Yes



The invisible data link part 1

Mike Cook finds that organisation is not easy

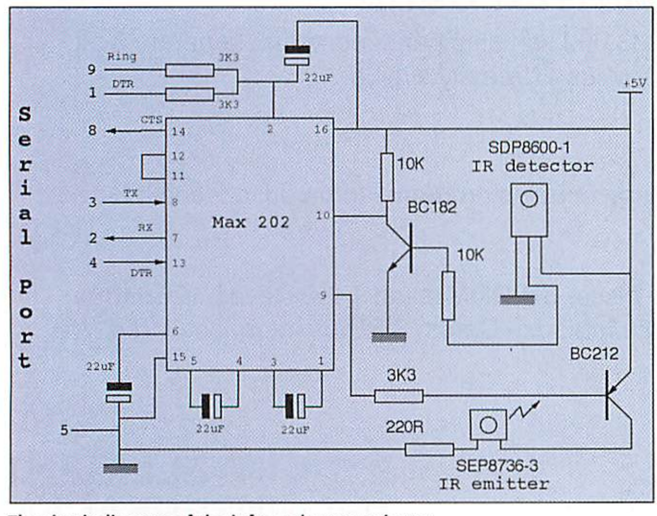
Some projects go smoothly – but not this one. Basically I got a letter from a reader asking if it was possible to use a low-cost personal organiser to type in programs while on the move, and then transfer them to his desktop computer. The organiser he had his eye on was the Oregon Scientific AM-399C and was sold at Boots for under £30. So I got one to see – and the quick answer to his question was no.

The reason is that the maximum length of a memo was 96 characters, not so good for a program. But also there was no way to put symbols in – not even an equals sign! However, for its designed function it worked quite well. There are three banks of telephone numbers, a scheduler, expenses manager and a memo pad. All these data banks can send and receive data via the inferred data link.

There is also a calculator, calendar and clock function along with a fullish rubber button keyboard. It boasts a 34K storage memory, which, before you laugh was more that the BBC model B had. It also has a 14 character three line LCD display. I suspect that it is a Far East re-badged consumer product, and so it could well be the same as many other low-cost organisers. Certainly the rather cryptic instruction sheet leads me to suspect a non-English speaking origin.

Having got it, I was curious to see if I could read the data coming from the infra-red link, so I got an IR detector with built-in amplifier and demodulator and hooked it up. Yes, there were pulses coming out of it, but no matter what I tried I could not make sense of them. I even resorted to using a logic analyser and stretching the pulses but all I got were &FFs and the occasional &FE.

The project then languished for about six months until I had another go. This time not with the fancy detector, but with a simple photo diode. With this the pulses made more sense, they were not modulated at all, like most inferred signals, it was just straight serial data. What was happening was that the demodulation circuit in my previous detector was taking out most of the information and leaving me with almost random pulses.



The circuit diagram of the infra-red communicator

The first thing I did was monitor the data on an oscilloscope and found it looked like serial data at the surprisingly unconventional speed of 600 baud. Also it was upside down, so I built a circuit that would allow me to get this data stream into my computer. The circuit is shown in Figure I and is built around a MAX202 chip. This is a TTL to RS232 converter and is most convenient to use as it generates the +/- 12 volts needed from a single 5 volt supply using switched capacitor inverters.

This meant that the signal from the detector only needs inverting with a simple transistor and feeding into the chip. Then this can be connected directly to the serial port of any computer. To send data back to the organiser you need to drive an inferred LED with the computer's serial data. Again this comes out of the MAX202 chip upside down, logic high meaning the beam should be off.

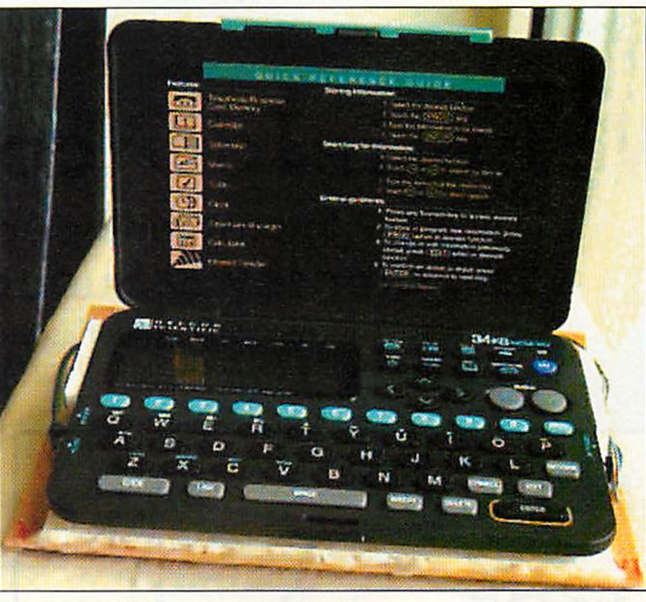
So again this needs inverting and buffering so as to supply the current needed for the emitter. This can be done with a single transistor, in this case you need a PNP transistor, so that things are the right way up. The sensor I used does contain an amplifier and Schmitt detector and it, together with the emitter, are side viewing. This is convenient but not essential.

The organiser does not produce a very

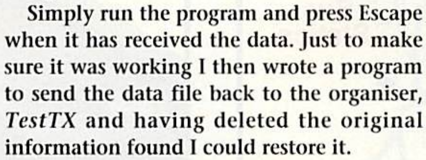


powerful beam, mainly to save on battery power, so any receiver needs to be placed very close to it. I built a small tray out of polystyrene mounting board to place the organiser on. A groove at the back of the organiser holds it firmly in place and the whole thing was mounted on a piece of veroboard, the sensors and other electronics were then soldered on that. The two were held together with copious quantities of epoxy resin.

A small amount of trial and error revealed that the data format was 8-bits, one stop and no parity, and a small program was written to store and display the data received. It's on the cover disc and is called *TestRX*, RX being old radio slang for receiver.



The organiser in situ

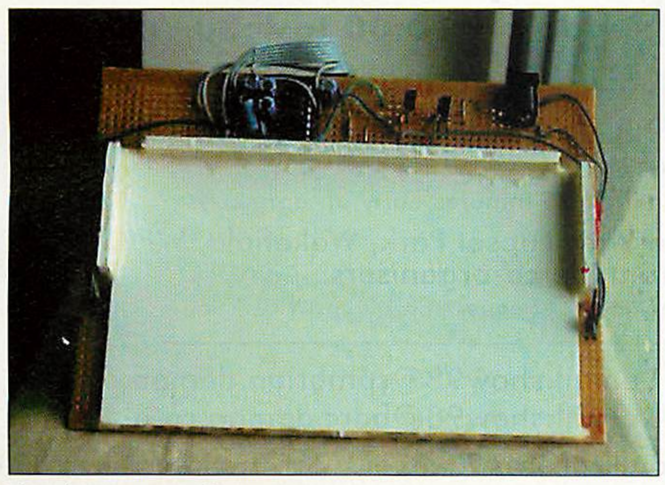


Simply run the program and press Escape when it has received the data. Just to make sure it was working I then wrote a program to send the data file back to the organiser, *TestTX* and having deleted the original information found I could restore it.

However, simply storing and restoring data is not all that useful; you need to be able to generate and edit entries on your computer and then transfer them to the organiser. So having got an example of each type of data transfer I set about trying to analyse the data format. I used *Zap* for this as it can display the hex numbers alongside the ASCII representation. An example of each type of data record is given on the cover disc.

The format is relatively simple, data is transferred as plain ASCII with &FF being used to separate data fields. All transfers start with a &50 followed by &00 to &05 depending on the type of records being transferred. Each separate record is terminated by an &FE and the file ends with a &F8, then another number and finally a &1A.

It was this 'other number' that was the problem, as my experiments showed that this was some form of check byte. If it wasn't right the data transfer was not accepted by the organiser. I tried the usual thing of adding up all the previous numbers and just taking the least significant byte but this was not it, therefore I had to investigate further.



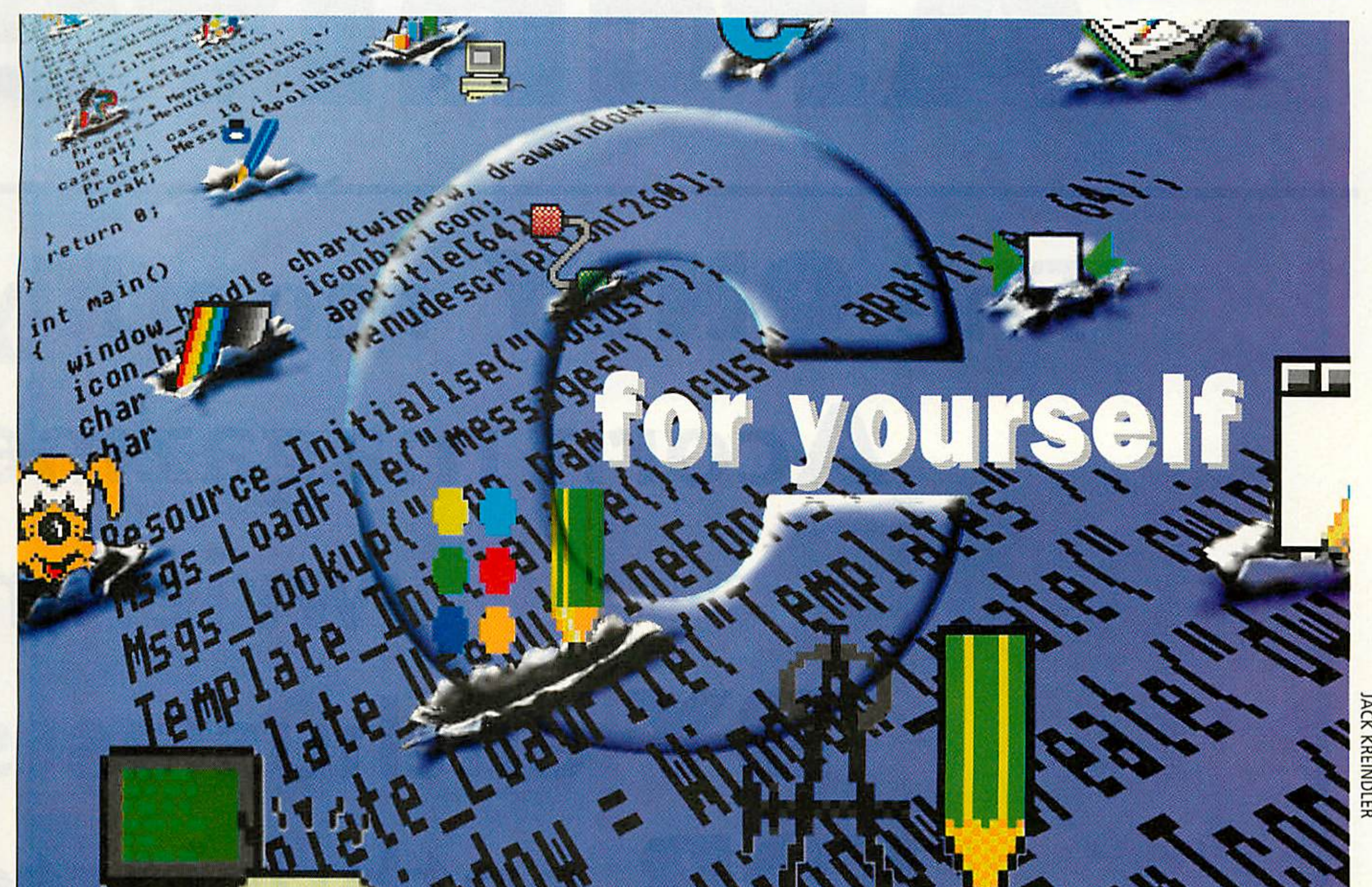
The polystyrene mounting tray

I did this by making a data block with only one letter in it, an A, and then I transferred it into the computer. Then I changed that to a B and finally to a C. If you know your ASCII this means that the blocks differed by +1 each time. To my surprise the check byte changed by -1 each time so that gave me the clue that the check byte was derived by subtraction rather than addition.

The way the other bits went I was sure that it was not doing a logical operation like an exclusive OR. Unfortunately that was not the whole story, I still couldn't get the check byte to come out the same as a received block of data. Finally inspiration struck – all the bytes were being treated as 8-bit, two's complement numbers, which were then being subtracted from a running total. This meant that the delimiters of &FF were being interpreted as -1, and when this was subtracted from the running total it had the same effect as adding one. Remember your maths – minus minus one is plus one.

Also, the start of file &50 byte was not being included in all of this. That sussed out I was able to write a routine to calculate what the check byte should be and I incorporated that into a simple program to read DATA statements and transmit them into the telephone records section of the organiser. This is on the cover disc and is called, imaginatively, *TestParity*.

To make this a fully-fledged desktop application required a great deal of work, basically because each record section requires its own window, editing software and file type. The expenses window was the most demanding – writing this took longer that the whole of the rest of the project put together. It also needs quite a bit of explanation about its working, therefore I will look at that next month. AU



JACK KREINDLER

Steve Mumford introduces two methods of plotting Draw elements on screen

Having provided a rough outline of a label editing and printing utility last month, this time round I'll investigate the methods of producing lines and shapes, as well as complete *Draw* files, from within an application. If you're just interested in plotting a simple border or box on the screen, the *Draw* module is the one you're after – it allows the user to create lines and shapes using a variety of different styles and shading methods. If, on the other hand, you're looking to render a file containing an existing collection of **!Draw** objects, another module, *DrawFile*, provides the tools to do the job.

During the implementation of our label-printing application, we will be making use of the calls provided by both these libraries. The simple output of the *Draw* module will provide us with the outlines to each label and any other lines we need to draw on screen. The *DrawFile* module allows us to support the importing of bits of **!Draw**-based clipart into our designs. Both these modules require a certain amount of knowledge about the method RISC OS uses to render elements of a *Draw* file, and that's what I hope to cover in the next few paragraphs.

The first thing to bear in mind when dealing with *Draw* is that it uses several different sets of units to store values about the orientation and position of objects – this is due to the fact that fixed point arithmetic is used during the rendering process, and the relative sizes of the units have been chosen to minimise the likelihood of these limitations becoming visible on screen.

As well as using the standard OS units, defined as being 1/180th of an inch, the *Draw* module requires certain values to be given in Internal Draw units and Transform units. The former are defined as 1/256th of an OS unit and allow greater precision when positioning a path. Transform units, on the other hand, are stored as pairs of two bytes within a word – the top two specify an integer value and the bottom two hold the fraction value. Both these units are used in the transformation matrix, a construct that allows the user to rotate, scale and translate a path as it's plotted.

$$\begin{bmatrix} a & b & 0 \\ c & d & 0 \\ e & f & 1 \end{bmatrix}$$

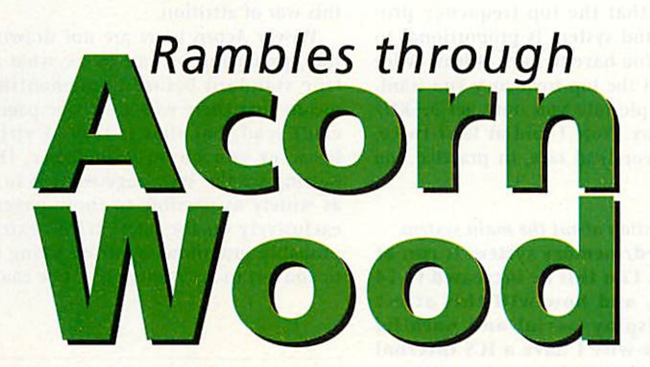
The transformation matrix is held in a three-by-three grid of numbers, the first two columns of which can be altered to achieve the desired effect. The values a to d allow a system to be scaled or rotated, and are specified in transform units, whereas translations are performed using e and f, given in Internal Draw units. Together, these parameters map an old (x,y) coordinate to the new position (x',y') using the following relationship:

$$x' = ax + cy + e$$
$$y' = bx + dy + f$$

For simple scaling operations, variables a and d hold the necessary scaling factors; for rotations of an angle θ, the values a to d should store $\cos(\theta)$, $\sin(\theta)$, $-\sin(\theta)$ and $\cos(\theta)$ respectively. The transform matrix is held in memory as a block of six words, storing the values a to f in that sequence. It crops up in almost all the *Draw*-related SWI calls, so it makes sense to ensure we know how it's put together. There are two main SWI calls that will be of use to us, and these are **Draw_Fill** and **Draw_Stroke** – they both take a pointer to the path they're about to render, more on the format of which later.

Included in the later versions of RISC OS and downloadable from *http://www.acorn.com/ftp/*, the *DrawFile* module provides a simple method of plotting the contents of a **!Draw** file onto the screen. This gives us a quick way of rendering the entire contents of a file in one go. Without this tool we would have to interpret the objects within manually, using the *Draw* module described above as well as sprite plotting and font drawing techniques.

For the task we're trying to perform (that is, including bits of pre-prepared clipart within our labels) this module gives us just the right level of functionality. That should give you a basic idea of the methods we can use in plotting **!Draw** files and their elements, and next month I'll look at how we can put these techniques into practice – see you then. AU



Another question and answer session with **Mike Cook**

There's another bumper batch of problems so I'll get straight on with them.

First off Allan Williams from Alphington who is having trouble with an old program:
Can you tell me why *!Crypt* from the *Acorn User* CD-ROM 1 disc will not work with the StrongARM when it ran fine on my A3000? The error I get is File 'Logon' not found. I have traced this down to line 130 but I have not been able to find the file Logon.

This application was in the directory AcornUser.Acorncomp.Cover.9402.Miscellany so I took a look at it. The offending line passes an instruction to the operating system to load a machine code file into an area of memory. The author had been lazy however and specified L. in the line. This no longer defaults to load, so simply replace this with LOAD and it will run. This probably applies to lots of other programs as well.

In the March issue, Bob Sapey was having a problem with Impression. Jocelyn Hardwick has had the same problem and now has a solution. She writes:
I asked CC about the Font exceeded error, having been very frustrated by the same message and resulting total freeze up. They said, 'To remove Font exceeded error message, find !Run in *Impression* and add a line after (Intro) Computer.Concepts Ltd of:

```
Set Impression$nodynamicareas 1
```

However, remove this line if you want more document space.'

This does seem to work but apparently it isn't really a solution. EFF are very scornful!

Now a solution to the problem of fitting a US style keyboard on a Risc PC supplied by Maurice Hendrix:
Some weeks ago I asked you to help me find a solution for my problems with connecting a US-style keyboard on a Risc PC. Although you didn't produce a solution you did actually ease me in the right direction. So, I'd like to let you know the solution I've found in case you'd like to 'spread the news'.

On the CD-ROM that came with the Dec 97 issue of *Acorn User* I found Acorn's Application Note #216 and #217 that pointed me in the right direction. The A4 and all Risc PC machines come with a US-style keyboard. On the A4 the possibility exists to add a separate keyboard. As many would use a US-style keyboard, the RISC OS 3 Support Disc supplied an application called *!IntKey*.

It supplies a module: InternationalKeyboard which is required if you want to use a US-style keyboard instead of a UK-style keyboard. I borrowed a US-style PS/2 keyboard connected it to my Risc PC then ran *!IntKey* and it works! I am now using my Risc PC with a Hewlett Packard PS/2 US-style keyboard and very happy. I hope this information may be of help to others.

J A Doggett has some advice on converting old software:
Having recently invested in a StrongARM upgrade, I set about wading through my software to see what still worked and what didn't. The *Patience* game which featured on the July 1996 cover disc was one that failed. This was because of the problem of the author using self modifying code. In this case the program can be fixed by changing a single byte. Simply change the byte at offset 99F3 From 00 to EF

If you use an editor that 'understands' absolute program files then the address to change becomes 8000 + 99F3 = 119F3. How does this work? Well the program built a SWI instruction in memory and then executed it. However, the zero byte had already been read into the instruction cache, presumably by some sort of read-ahead, the author had then attempted to flush the pipeline by branching to the instruction. The fix is to simply pre-load the SWI instruction into memory. It works because the operating system re-reads the instruction to determine the SWI number i.e. a DATA read.

Thanks for that. You wonder why the author tried to use self-modifying code in the first place if it could be replaced by the actual SWI value. In my opinion the only reason to use self-modifying code nowadays is for program protection. All other reasons like memory efficiency and execution speed have gone out of the window with plenty of memory and high CPU speeds.

Gerald Lavers from Teignmouth in Devon is having a bit of a problem with a PC file format. He sent me the disc and writes:
I have some photographs on a PC disc from York Photo, it's a so called Photo Floppy. However when I try to look at them on my A3000 with *ChangeFSI* I get a message saying there is an error in the file BMP file format. I am using version 0.95, is there a newer version that will cope with it?

I don't think so – I get the same result when I try to use v1.15 of *ChangeFSI*, it thinks they are BMP files. These images are actually in a PORST file format which appears to be a highly compressed photographic format. In fact a 23K file expanded to 99K when saved as a good quality JPEG file.

I had not actually heard of this format before, but fortunately my Macintosh (well at least *Graphics Converter* 2.9) had. Therefore I was able to change them into JPEG files which *ChangeFSI* can cope with. Note that you will not see the full quality on your computer as these are 24-bit colour images and your system will only show 8-bit images. *ChangeFSI* will adjust things, but it will not look as good as on a Risc PC in 24-bit or 16-bit screen modes. Does anyone knows of a utility that will read these file types?

On another point, Mr Lavers sent a DD disc formatted to HD – you should never do this as the storage is unreliable. In fact I'm surprised that the software let him do it as usually the hardware detects the type of disc and stops the software formatting it. That's why if you want to do this you have to drill a hole in the disc.

Andrew Moore is having a bit of hassle with his PC card:
I am having a problem getting Windows 95 to run in 256 colour mode as demanded by certain pieces of software. This is because it defaults to 16-bit. I have tried setting the Risc side to 256 colours, as advised by our Acorn dealer, but whenever I try this on Windows 95 via Control panel, Display, Settings etc, I find that once I reset the system the colour setting have reverted to 16-bit and the software I wish to install is still not accepted. As a novice in these matters it would be of great help if you could explain how to do this.

It sounds like Windows is not saving the configuration details. Make sure there is enough room on your hard drive and that you have no write protection implemented. When you change the default in the control panel make sure you close all the windows and shut everything down before you reset the machine, as you might be resetting before the operating system has had chance to save the settings.

Ben Timms from Peterhouse Cambridge wants to look at some videos on his computer, he writes:
Is it possible to play MPEG layer 3 on an A3010? I have 4Mb RAM but all the MPEG players I have encountered demand 16-bit audio!

I would think that your processor is a bit lacking in the horsepower department for this. ➤

Rambles through

Acorn Wood

➤ Does any reader know of something that would help?

Alan Highet finds that printing transparencies is no problem, he says:

Having read Bill Darlington's problems printing on transparencies, he doesn't say whether he is still printing on the HP520 or HP590C from *CorelDraw*. I haven't had any problems printing on transparencies from *ArtWorks* and I am using a Turbo-Driver to a Canon BJC600. I have used numerous makes of transparencies but now use Data Image Ink Jet Film which has the advantage of having a cover film that protects the ink once printed.

The difference here is probably the Turbo Driver as this bypasses the normal printer driver system and uses its own software. Needless to say Acorn don't recommend these, but it looks like they do the trick.

Peter Fox from Scarborough is thinking of making the big leap:

My computer is not of central importance to my life but, nevertheless, I should miss my Acorn 310, partly for its use as a word-processor, but also because of a few utility programs which are useful to me. The latter have all been written by me in Basic, and all depend on simple sequential data files, containing mixed fields of integers, real numbers and strings.

The problem I foresee is, if I have to go down the PC road (although I hope not), is it possible to have the data files converted so that they can be read by a PC? I realise that another program would have to be written in *Qbasic* or *QuickBasic* to manipulate the data. The idea, for instance, that I might have to rewrite the details of 7000 photographic slides is not appealing. My daughter has a PC and one of the programs might be useful to her.

Yes, it is quite easy to change your data files. The answer is to get all your data into text format. Note this is not the same as saving data as a text string because strings are stored backwards in Acorn data files. What you need to do is to write a little program that reads in the strings and numbers from your data file and writes them out in a text format.

This is just a simple matter of picking one character at a time using MID$ and then sending it to an output file using BPUT. In between strings you might like to put a delimiter character, a return or line feed can suffice that is ASCII 10 or 13. However, you might like to use a TAB (ASCII 9) to indicate a different string but within the same data set.

You should convert numbers to text as well by first converting them into a string and then outputting the string. Then, when you have finished, change the file type of your output file to text. This can then be read as text by any half decent PC language and converted into its own format. Finally one piece of advice, don't bother – stick with Acorn.

Martin Wilson has a hankering to improve his computer and first he wants to improve the sound:

My questions all relate to my A3010 model. It's not the more common variety as it has separate main chips on a daughter board.

I've heard that internally most, if not all, Acorn RISC computers have connectors for unfiltered sound, but if you connect directly to them the top frequencies of sound need some sort of smoothing or filtering. The standard Acorn way of dealing with the sound is to simply cut it off at the top end, hence the bass heavy sound that most Acorns give out.

I wonder if you could construct a simple circuit to improve on the quality of sound output using these connectors. I very much enjoy playing MODs but don't like the absence of top end frequencies. I read in one of the Archimedes disc magazines, possibly *Spectrum*, that there used to be a kit for modifying sound. The person writing this actually did the modification to his A3000 and thought the results were very good. I'm sure many people would appreciate the info and it should be a relatively easy project compared to some.

Let's get things straight, smoothing, cutting off the top and filtering are all the same process. The A3000 has got a four pole filter on each stereo channel, the more poles you use the more complex the electronics and the more sharply the filter cuts off. If you want to improve on the sound, you have to improve on this.

One of my projects that would do this is the graphics equaliser in the July 97 issue, but rather than being simple it was one of the more complex projects, at least concerning the number of components it used.

Bear in mind that the top frequency produced by the sound system is proportional to the sample rate. You have to have at least twice the sample rate of the top frequency you want. So at 11KHz sample rate you only get 5.5KHz top frequency max. Note I said at least twice, that is only a theoretical rate, in practice you often need more.

Next he has a question about the main system:

The motherboard/memory system is run at 12MHz I believe. Can this be increased to 14 or even 16MHz, and how will this affect the monitor display, serial and parallel ports? Hardware-wise I have a ICS internal IDE interface and both internal and external hard drives, plus an Atomwide printer SCSI interface.

While it is true that all computers can have their clocks tweaked to boost performance, in general I am a firm believer in not doing so. This is because you reduce the performance margin. That is, when components age or get hot they can respond more slowly, and so running them flat up against their limit makes them fall over more easily. Anyway the performance difference between 12MHz and 16MHz is hardly noticeable.

Finally a question about processor upgrades:

I believe my A3010 can be upgraded to ARM3 and would like to fit one. I've read that speedwise there's not much difference between the slowest ARM3 at 20MHz and the fastest at 40MHz. Why is this, and is it related to the speed of the memory system?

Most of the A3010 can't be upgraded, but very early ones like yours with a daughterboard can. However, this depends on whether the processor was fitted on a socket or soldered directly in. If it is soldered then there is virtually no chance that you could unsolder it and still have it work.

You will notice a great speed increase from an ARM2 to an ARM3, I certainly did on my original A310. This is mainly to do with the instruction cache pipelining. However, you might find it cost-effective to simply go for another computer. I expect the second-hand prices of Risc PCs will start to drop as the new model takes over.

Finally here is an e-mail from Harry East (via his grandson!):

I have a Risc PC 600 Acorn computer. I am a small-time user and have only recently started browsing the Internet. At the moment I seem to get a message on certain pages saying 'update Browser'. Having just bought the modem and software, I thought it would be up-to-date. The system I am using is called Argonet. I have heard of many different systems but am not sure whether they would work on the Acorn computers.

You have fallen victim of the browser wars. Basically Microsoft are trying to monopolise the Web and one ploy is to produce all sorts of features that are non-standard and then try to make them standard. This means every one else has to try to keep up and so spend valuable resources in the attempt. As Microsoft have the largest of all resources they can eventually win this war of attrition.

Wisely Acorn users are not drawn into that trap, preferring to wait to see what becomes a true standard before implementing it. This means that there will always be pages that you can't read, but that is true of virtually any browser you have. Remember, the people putting up the Web page want it to be viewed as widely as possible so those pages that rely exclusively on the latest HTML extensions are probably just showing off or trying to get you to convert to Microsoft – don't be caught.

AU

Contacting me

You can contact me, Mike Cook, by post at the usual *Acorn User* address or by e-mail at: auqanda@idg.co.uk

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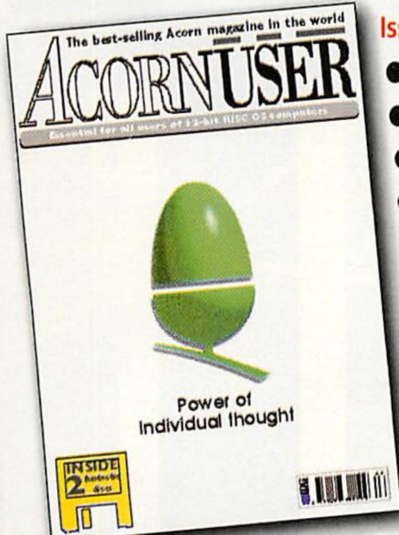
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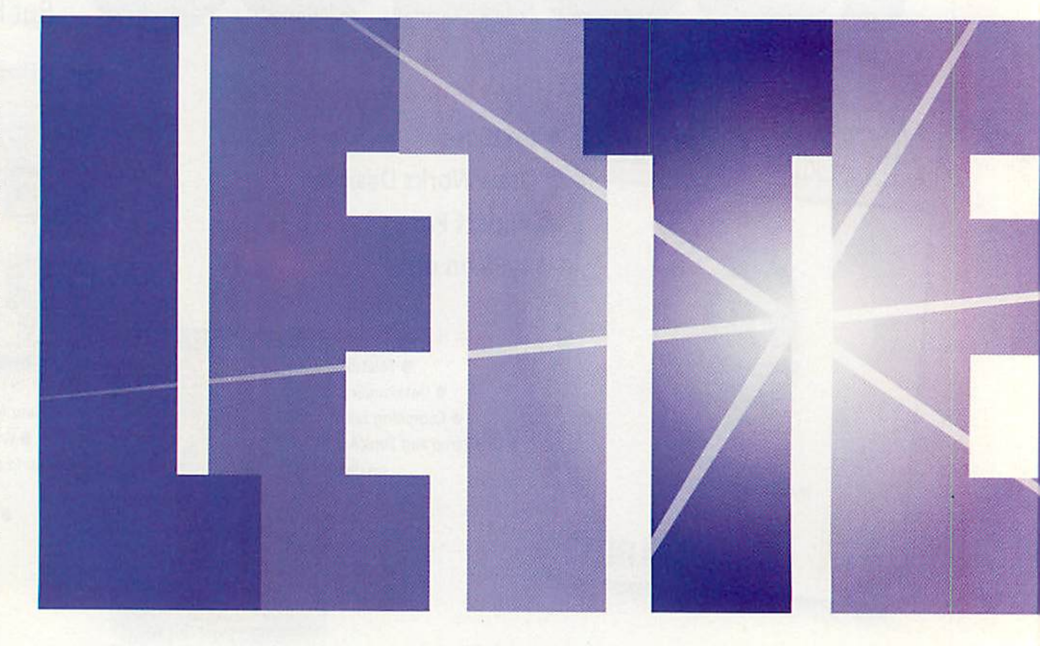
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World Wide Wait

I have a problem. I have produced a number of electromagnetic animations on my StrongARM Risc PC. These have been included on my website at http://www.lago.demon.co.uk

Using RISC OS and the *ANT Internet Suite* browser (Fresco) I get very good results, but with the 5x86 100MHz PC card the animation is very slow. Internet Explorer is hopeless and Netscape Navigator just tolerable.

Several friends and colleagues who have 'proper' PCs with Pentium chips can't do much better. But this means that my site will not give satisfactory results for the many millions out there who have bought the 'industry standard' rubbish.

My friends and colleagues are all very impressed with RISC OS and admit to being envious of my machine. Is there nothing Acorn can do? They are welcome to use my site as an advertising ploy (no charge). Plus would anyone be willing to start a charity to benefit these unfortunates, many of whom will be unable, for financial reasons, to make a fresh start? I would be grateful to any readers who would look at my site on an Acorn, Mac or 'proper PC' and send me an e-mail assessing the performance obtained.

Dr 'Bas' Lago
bas@lago.demon.co.uk

Toolbox

A few years ago Acorn brought out their brilliant *Toolbox* resources. As a very small-time programmer I thought that they were a godsend and set about trying

Re: Spotlight on Sibelius

The Finn brothers deserve the credit and profit from their labours in designing and selling the *Sibelius* software that has taken the UK music industry by storm, if not quite in the US. But it is not without its problems, and no report is honest if they are ignored. I have been using it from fairly early on, and have watched the emphasis change from music typesetting to home playback via MIDI.

Nothing wrong in that. It makes sense because the professional typesetting/publishing/composing market is fairly specialised. Two things bug me. The first is just that – bugs. There in the early versions and still there. Despite the claim to rival serious engraving programs, some of its inflexible musical syntax is wrong. Try predicting if text at the end of a page will actually stay there.



Secondly, as a demonstrator for the software I put thousands of pounds worth of business to Sibelius, because I was selling the hardware too, the exclusive platform. Time and again I was asked "any plans to port over to the PC?". "No" said Sibelius. What they didn't say was that new software for the PC was in the pipeline. What should I say to my 'customers' now?

Anyone serious about music typesetting really ought to check out PMS (Philip's Music Scribe) via P.Hazel@ucs.cam.ac.uk. It doesn't dazzle the eye but it's flexible, consistent, dependable, and after a steepish learning curve, fast in use. The output is a delight to the eye. As a musician, I know which I prefer to read.

David Andrews
Harrogate, N Yorks
E-mail: music.man@zetnet.co.uk





to buy them. However, Acorn told me that if I wanted the *Toolbox* package I had to buy it with the C Developer's Kit costing about £250.

I think a lot of people would be prepared to pay for the *Toolbox* if Acorn released it as a separate product. So why don't they?

John Scott
E-mail: jjrs101@york.ac.uk

We totally agree that it ought to be a separate package, and perhaps Acorn may release it in that way now that Acornsoft is reborn.

However from their point of view it may not be a viable option. Acorn have a particular style of slip-box which they have, up to now, used for their software products. It's not a cheap design and unless they're planning to change it, it would probably be prohibitively expensive – from their viewpoint – to sell the Toolbox at a lower price.

That's all conjecture, of course, in the meantime we'll just have to hope.

Air your views

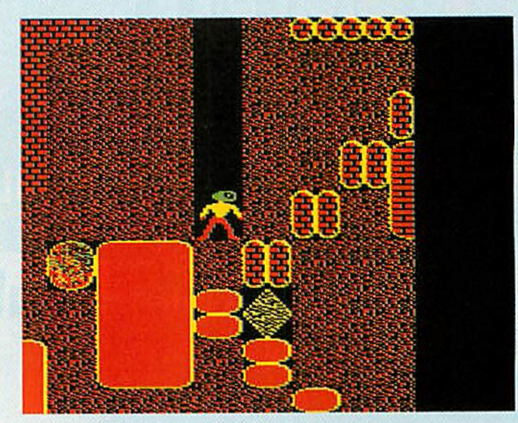
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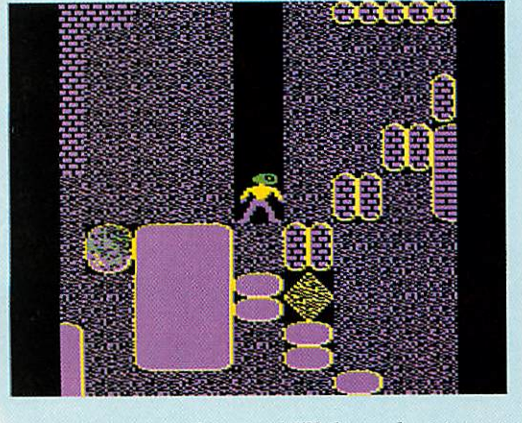
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Repton review

Just a quick note to say that there were a number of inaccuracies with the *Repton 1* review by Graham Nelson back in the January issue of *Acorn User*.



First of all, the 'StrongARM Enhanced Version' mentioned by Graham would, in fact, have worked on any Risc PC – no StrongARM is required. We have recently noticed that with a minor change the program could also work on any RISC OS machine capable of displaying Mode 21, as used in the game. Hence we made this minor change and the version available now will work on any Acorn computer. The Archimedes standard version remains available, for those unable to display the hi-res modes.





Secondly, the program crashes puzzle me. When Steve Mumford first wrote to me informing me that the program crashed at those places, I passed a copy of the letter on to John Wallace, who wrote the conversion, who then set to work with correcting the problem. He then attempted, many times, to e-mail, in vain, an updated version.

To conclude, as most people should be aware by now ProAction titles are being distributed by R-Comp Interactive in Knutsford, Cheshire.

If you have any sales queries please e-mail: proaction@rcomp.co.uk or rci@rcomp.co.uk and every possible assistance will be given. Alternatively, ring RCi on 01925 755043.

If you have any problems with *Repton*, or indeed any ProAction game, please contact them and I'll do my best to sort them out!

David Bradforth
ProAction

Graham Nelson replies: *It's good to hear that the enhanced graphics are to be available on a wider range of machines. We seem to have misunderstood the written documentation on the StrongARM point, and for that I apologise – not for the first time, "StrongARM-only version" has been confused with "StrongARM-compatible version".)*

As for glitches, we may overlook small faults in preview or beta releases of games, but your letter read "This is the final version of Repton 1... the bugs have all been removed" and I reviewed it as such.

Deadlines permitting, we have often altered copy after receiving updated versions, and I'm sorry you had such trouble getting through.

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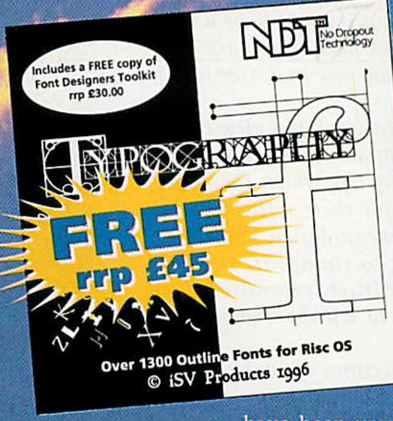
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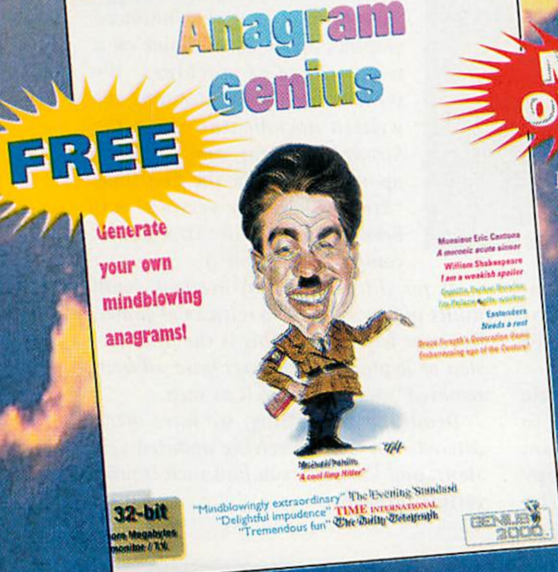
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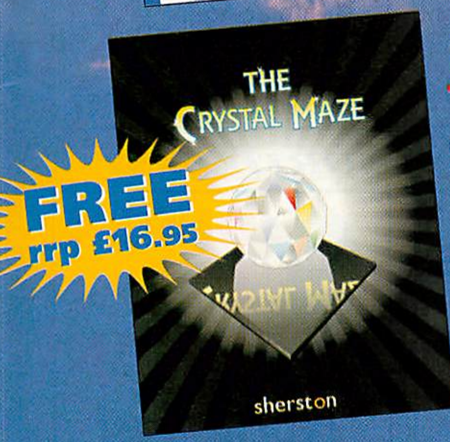
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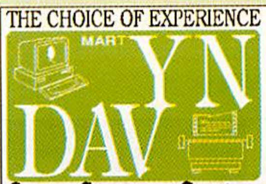
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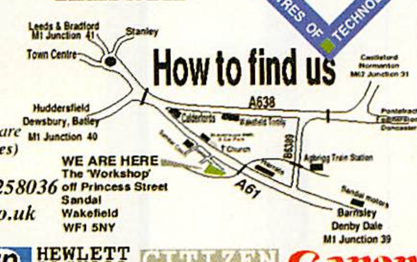
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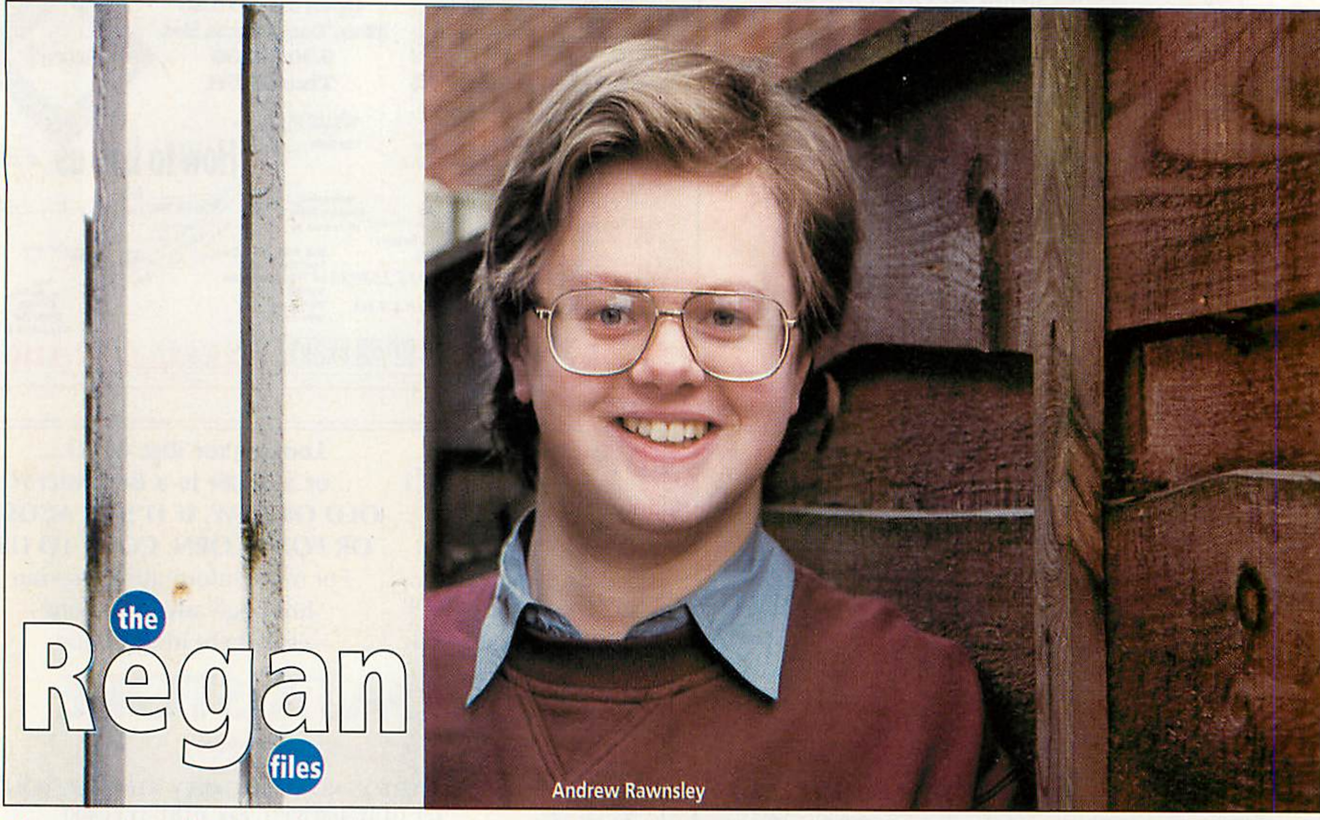


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Andrew Rawnsley

It's a sunny but cold Friday in late February and I'm recovering from a bout of 'flu. I arrive at the epitome of a middle-class home in Knutsford and am cheerily greeted by Andrew Rawnsley. There's Christian worship music on the piano and cherubic photographs of family members at various stages of growing up around the room. Andrew does a good cringe – I feel better.

Andrew is R-Comp, well-known for *HTMLEdit*, and now for their port of *Doom* to the Acorn Platform.

'Doing a big name game gave R-Comp Interactive credibility', begins Andrew. 'Plus it gave the Acorn platform another credible game. I thought it was important. Even though *Doom* is an older title, some people think it is the best game ever. Everyone comes up with an excuse as to why they want a computer; for some it is a highbrow reason, but the vast bulk are family users, and so games then make the Acorn more attractive. I would like to think that I was gaining credibility for the platform as well as getting a pedigree for R-Comp.'

The conversion of *Doom* means that RCI are moving in to a position where they can talk to the 'big guys': 'I think lots of people do not understand the importance of publishers', Andrew continues. 'In the outside world you have development groups and then you have publishers. Publishers do not get a lot of credits, but they do have the sway.

'So if you can say you have worked with GT and GT is pleased with you – which is by and large our case – we can push for other titles. Other publishers will take notice. At the end of the day it is the publishers who put their heads on the line.'

RCI are doing other games, exactly which may have been announced by the time you read this. RCI are sticking their necks out financially to do *Doom*, but Andrew has great faith in the Acorn market, believing that it will be good to him. He's not leaving his original business, though.

'*Doom* has thrown R-Comp Interactive into the limelight, but I stress that the core business for me is the Web authoring stuff, of which there will be new versions. I believe the best way to concentrate on something is to have a distraction; when I was doing exams my computer was my distraction to my revision, so the games are the distraction to my Web authoring tools. I have always been a games player and I have never had any sort of console. I enjoy games – I find them subversive and escapist. The only programming I do though is the installation and the front-ends'.

> 'They are called camps, only they gave up the idea of tents, because we were all too geeky.'

Andrew is a Christian, which may help him keep a positive outlook on life. As he says: 'If people want to take the mick then that's fine, at the end of the day I would like to think that being Christian we care a little bit more about our customers'.

'Over the summer Scripture Union runs computer and electronics holidays. They are called "camps", only they gave up the idea of tents, because we were all too geeky – they moved inside. With soft beds and rooms, it's a convention of geeks. As it is run by Scripture Union there is a bit of a Christianess about it, but the rest of the day is one big computer fest. I went first when I was a kid; these days I am supposed to be a leader'.

Most people have ideas about what they might do if they retire, but Andrew pretty much had to face up to being retired off before he had even done his A-levels. While a teenager Andrew was diagnosed as having post viral syndrome, otherwise known as ME.

ME is quite a debilitating illness. You need a lot of sleep, some days you cannot get out of bed, and you cannot predict when the bad days are going to be. Amazingly, Andrew managed to continue his A-levels. He only went to school when the lessons were vital; the rest of the time he taught himself. Although he managed to get straight 'A's, university was out of the question, so what else was there to do?

'I got into computing when my father brought one into the house', continues Andrew. 'I set up R-Comp; it was something I could do from home, so I could work around my illness. It has grown. People say: "make more money and write for the PC", but I enjoy what I do, and that is the single most important thing.

'I am happy in the Acorn world. I have lots of friends – the personal contact is wonderful. Some may say the Acorn market is small, but so long as you release good products and keep doing so, it will be good to you.' **Jill Regan** AU

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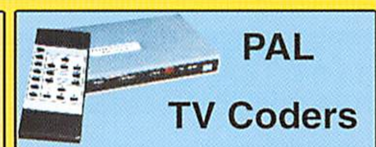
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